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BROOME TECHNICAL COMMUNITY COLLEGE

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CALENDAR 1966-1967

SUMMER TERM 1966

Aug. 30	4:30 p.m.	Classes End
Aug. 31, Sept. 1, 2		Examinations
Sept. 9		*Co-operative Period Ends
Sept. 9	7:30 p.m.	Graduation for Electrical and Mechanical Technology Students

FALL TERM 1966

Sept. 10	9:00 a.m.	Orientation Begins
Sept. 12		*Co-operative Period Begins
Sept. 14	11:40 a.m.	Classes Begin
Sept. 27	4:30 p.m.	Last Day to Drop Courses Without Grade
Oct. 11	4:30 p.m.	Last Day to Drop Courses With "W" Grade
Oct. 21	4:30 p.m.	Mid-term Grades Due
Nov. 23	11:30 a.m.	Classes Dismissed—Thanksgiving
Nov. 28	7:40 a.m.	Classes Resume
Dec. 2	4:30 p.m.	Classes End
Dec. 5-7		Examinations
Dec. 12-16		Counseling
Dec. 16	4:30 p.m.	Christmas Vacation Begins
Dec. 23		*Co-operative Period Ends

WINTER TERM 1967

Dec. 26		*Co-operative Period Begins
Jan. 3, 1967	7:40 a.m.	Winter Term Begins
Jan. 16	4:30 p.m.	Last Day to Drop Courses Without Grade
Jan. 30	4:30 p.m.	Last Day to Drop Courses With "W" Grade
Feb. 7	4:30 p.m.	Mid-term Grades Due
Mar. 13	4:30 p.m.	Winter Term Ends
Mar. 14-16		Examinations
Mar. 17		*Co-operative Period Ends
Mar. 20		*Co-operative Period Begins
Mar. 20-24		Senior Placement Interviews
Mar. 20-24		Counseling

SPRING TERM 1967

Mar. 27	7:40 a.m.	Classes Begin
April 7	4:30 p.m.	Last Day to Drop Courses Without Grade
April 21	4:30 p.m.	Last Day to Drop Courses With "W" Grade
May 1	4:30 p.m.	Mid-term Grades Due
May 30		Classes Dismissed—Memorial Day
June 6	4:30 p.m.	Classes End
June 7-9		Examinations
June 14	7:30 p.m.	Graduation
June 16		*Co-operative Period Ends

SUMMER TERM 1967

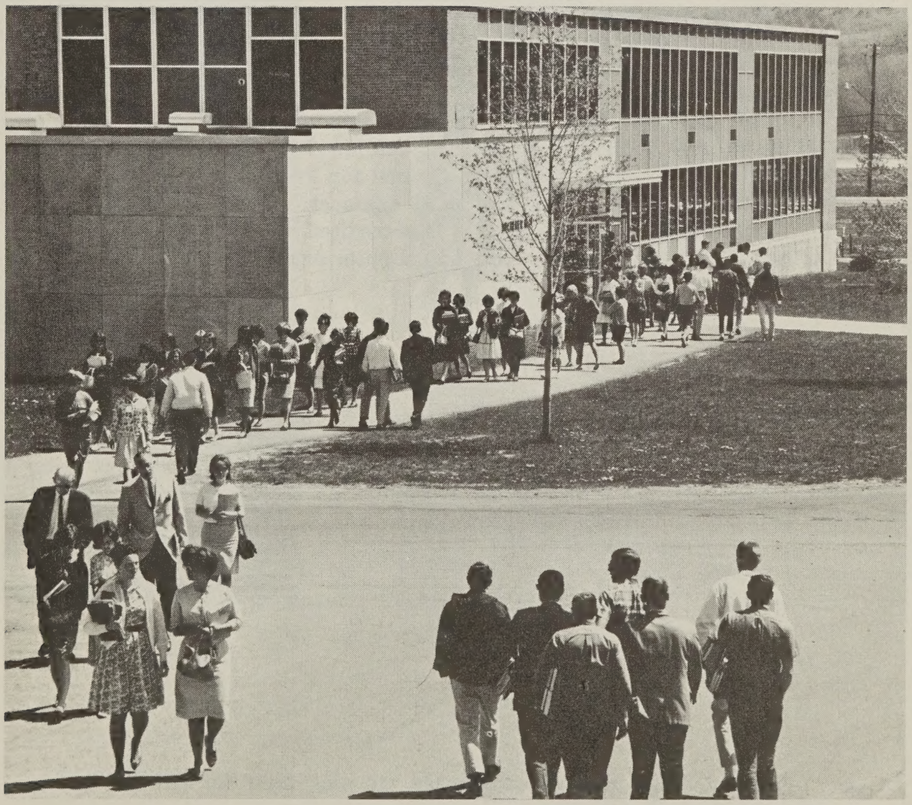
June 19		*Co-operative Period Begins
June 19	7:40 a.m.	Classes Begin
July 3	4:30 p.m.	Last Day to Drop Courses Without Grade
July 4		Classes Dismissed—Independence Day
July 5	7:40 a.m.	Classes Resume
July 17	4:30 p.m.	Last Day to Drop Courses With "W" Grade
July 25	4:30 p.m.	Mid-term Grades Due
Aug. 29	4:30 p.m.	Classes End
Aug. 30, 31, Sept. 1		Examinations
Sept. 6	7:30 p.m.	Graduation for Electrical and Mechanical Technology Students
Sept. 8		*Co-operative Period Ends

*Co-operative Work Period for Electrical, Mechanical Technology students

BROOME
TECHNICAL
COMMUNITY
COLLEGE

Binghamton, N. Y.

1966-67
CATALOG



ACCREDITATION

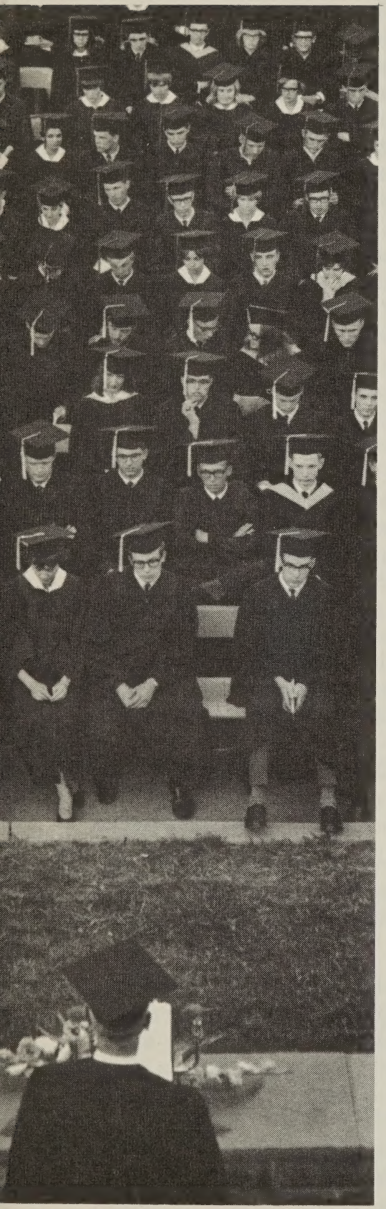
Broome Tech is a member of the Middle States Association of Colleges and Secondary Schools.

The College is supervised by the State University of New York, and its curriculums are registered by the State Education Department.

The Chemical, Civil, Electrical and Mechanical Technology programs are ECPD accredited Engineering Technology curriculums. ECPD is the Engineers Council for Professional Development, a national organization of engineering societies.

The Dental Hygiene program is accredited by the Council on Dental Education of the American Dental Association.

The College reserves the right at any time to make changes deemed advisable.



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ABOUT BROOME TECH

THE CAMPUS

The Broome Tech campus is located three miles north of Binghamton on Upper Front Street, which is Route 11 and Route 12 at this point. Six of the seven buildings form a quadrangle to make a compact campus layout. The seventh building, dedicated in May of 1963, is just outside the quadrangle.

The buildings are all two stories high, of modern functional design, and made of brick with colored panel-wall facing. They lie in a suburban setting in the virtual center of the college's 62 acres of land.

In addition to classrooms and laboratories, the campus has its own cafeteria, a fine gymnasium and athletic field, and a Little Theater. These facilities add up to make the campus a $5,000,000 investment in the youth of Broome and surrounding counties. This investment will soon be more than $6,000,000 as the College's expansion program is being developed.

THE COMMUNITY

The Community is an industrial and agricultural area in New York State's Southern Tier. It is in the approximate center of the state, measuring from East to West, and its southern extremity touches the Pennsylvania state line.

Binghamton is the principal city in Broome County, but it is an integral part of the community known as the Triple Cities. Endicott and Johnson City are the other two cities, but Vestal and other outlying suburbs help to make the community much larger in population and geography than the city limits of Binghamton.

Binghamton has a population of 75,941, yet the Triple Cities area embraces 148,524 people. The population of Broome County is 212,661. Diversified industry has made the community an economically sound one.

The College has become an integral part of the community since it was started in 1947. Many of the campus facilities are offered without charge for use by responsible organizations, and most of the College's curriculums are designed to help fill the economic needs of the county.

GROWTH AND EXPANSION

The rapid growth in student enrollment in recent year has made it necessary for the College to embark on a substantial expansion program. The construction of a new library, a new entrance and perimeter road, parking facilities for about 750 additional cars, and a new athletic field for track and soccer was begun in 1966. A temporary building was also approved for completion before the start of the 1966 fall term.

The College has immediate plans, too, for two new buildings—one for Business department classrooms and the other for additional Chemistry and Biological Sciences laboratories. Enlargement of the Student Center to provide greater cafeteria, lounge, book store, gymnasium and study facilities is also planned.

The Broome Tech campus was constructed in 1956 to accommodate 900 students, which was about three times the College's enrollment at that time. The student body will reach double that 900 capacity in the fall of 1966, and the only building added to the original campus was Titchener Hall in 1963. The expansion program will make it possible for the College to accommodate 3,000 students, which is expected to be the enrollment by 1970.

HISTORY

Broome Tech graduated its first class in 1949. These students had entered what was then known as the New York State Institute of Applied Arts and Sciences at Binghamton in the fall of 1947. The original institute was one of five founded in the state in 1946, following the pattern of six agricultural and technical institutes which New York had established earlier in the century. The first programs offered were all occupational in nature and included Chemical, Electrical and Mechanical Technologies, as well as Medical Office and Technical Office Assistants courses.

In 1953 New York relinquished operating control of the school to a new sponsor, the County of Broome, under provisions of the newly-enacted State Community College Law, and the name was changed to Broome County Technical Institute. In 1956 the name was again changed to its present one, Broome Technical Community College, to reflect the increasingly comprehensive nature of its educational offerings.

In keeping with the comprehensive objectives of this community college, a university-parallel curriculum was instituted in the Engineering Sciences in 1959, a two-year program of Liberal Arts and Sciences was started in the fall of 1962, and a transfer program in Business Administration was added in 1963.

For its first five years, the school was housed in a refurbished State Guard armory in downtown Binghamton. This building was gutted by fire in September of 1951, and for the next five years Kalurah Temple and two other buildings in the city provided temporary quarters. In 1957 the college moved to its present campus on the north side of Binghamton on Route 11. The first addition to the original campus came with the construction of Titchener Hall, which was dedicated on May 17, 1963.

OBJECTIVES OF THE COLLEGE

1. To provide the environment and the experiences which promote the students' vocational competence, individual growth and social responsibility through integration of the following:

KNOWLEDGE. The acquisition of facts, principles, theories and insights which are fundamental to the understanding of a specialized field of study and of life itself. Cognizance of common sources of information for further intellectual growth.

PROFICIENCY. Development of analytical thinking and language abilities for the comprehension, evaluation and communication of knowledge. Development of laboratory techniques relevant to the students' chosen vocational fields.

ATTITUDES. The stimulation for personal growth—vocational, intellectual, cultural and physical. The appreciation of and commitment to desirable social values.

2. To commit the resources of the College to the business, industrial, educational and cultural enrichment of the community.

DEGREE PROGRAMS OF THE COLLEGE

Broome Tech is a two-year co-educational comprehensive community college. It seeks to provide educational opportunities for all who can qualify for them and benefit by them through a full-time day program and a part-time extension division which includes the evening classes and a summer school.

The full-time day curriculums have two objectives—to prepare graduates for immediate employment or to prepare them to transfer to the third, or junior, year of a four-year college or university. All graduates receive an associate degree. Liberal arts courses are combined with technical education in all curriculums.

Applicants to the College should consider carefully the type of program they wish to pursue, for the nature of the offerings makes it difficult for a student to switch from one curriculum to another after commencing his studies.

TECHNICAL PROGRAMS

In the area of technical education, the college offers five programs. One, Engineering Science, is in effect the first two years of an engineering curriculum, and students who do satisfactory work in it should experience little difficulty in transferring to engineering colleges at the third-year level.

The other four are designed to train engineering technicians in the fields of Mechanical Technology, Chemical Technology, Electrical Technology and Civil Technology. Graduates of these programs are prepared for immediate employment in various types of technical work upon leaving the college.

BUSINESS

The Business curriculum is designed primarily to prepare graduates for immediate employment in one of four fields—Engineering Secretarial, Executive Secretarial, Accounting, and Marketing and Sales. In addition, there is a fifth option, Business Administration. It combines more university-parallel preparation with a minimum of job-oriented courses for the person who plans to continue his college education for a baccalaureate degree, even though he may want to work for a while before transferring to a four-year college.

LIBERAL ARTS AND SCIENCES

This curriculum is a university-parallel course, designed especially for the student who wishes to transfer to a four-year college or university after graduation. A sound liberal arts education is basic to many of the professions, such as medicine, law or teaching, and applicants who have such a goal would be well advised to consider this selection. It is also considered excellent preparation for further schooling in business administration.

Many students simply do not know what field to select as a goal. A liberal arts course may serve as a foundation from which a choice of major study can be made at a later date with a minimum loss of time.

NOTE—Students in all programs spend at least one fourth of their time studying such Liberal Arts subjects as English, psychology, sociology, and economics. The College recognizes that, in addition to technical competence, a graduate should study those subjects which help to understand people and their daily working and personal inter-relationships.

HEALTH PROGRAMS—Dental and Medical

Opportunities for women interested in the health services field are provided in four areas—Dental Hygiene, Medical Office Assistant, Medical Laboratory Technology, X-ray Technology programs.

Dental Hygiene graduates are qualified to take state licensing examinations which permit them to practice their profession, according to laws of their individual states. They are also eligible to take the National Board examination in the spring prior to graduation or at a later date.

While most of the graduates of this program go to work in dentists' offices, there are many additional employment opportunities. See page 34.

A graduate of this two-year program is also eligible and qualified to pursue a Bachelor of Science degree in Health Education. Formal arrangements for this program have been made with nearby State University College at Cortland, New York, although transfer is possible to other colleges, too.

Those enrolled in the **Medical Office Assistant** program are trained to handle the heavily-increasing load of record-keeping in hospitals, as secretarial practices are stressed as well as medical-related courses. Graduates are also equipped to assist in physician's offices, and to do many routine phases of laboratory work, so that many find employment in hospital laboratories and pharmaceutical companies.

The **Medical Laboratory Technology** program is a new one designed to give students opportunities as technical laboratory assistants or technicians in the biological, chemical and para-medical fields. Thus graduates of this program have a wide range of employment possibilities. These include positions in hospital, public health and pharmaceutical laboratories, the chemical industry and food processing plants.

Students enrolled in the **X-ray Technology** curriculum are prepared for immediate employment in X-ray rooms of hospitals or in offices of physicians who do X-ray work. A recently enacted New York State law emphasizes the desirability of X-ray technicians having an Associate in Applied Science degree. Graduates of this program are eligible to take the New York State Health Department and/or Civil Service examinations.

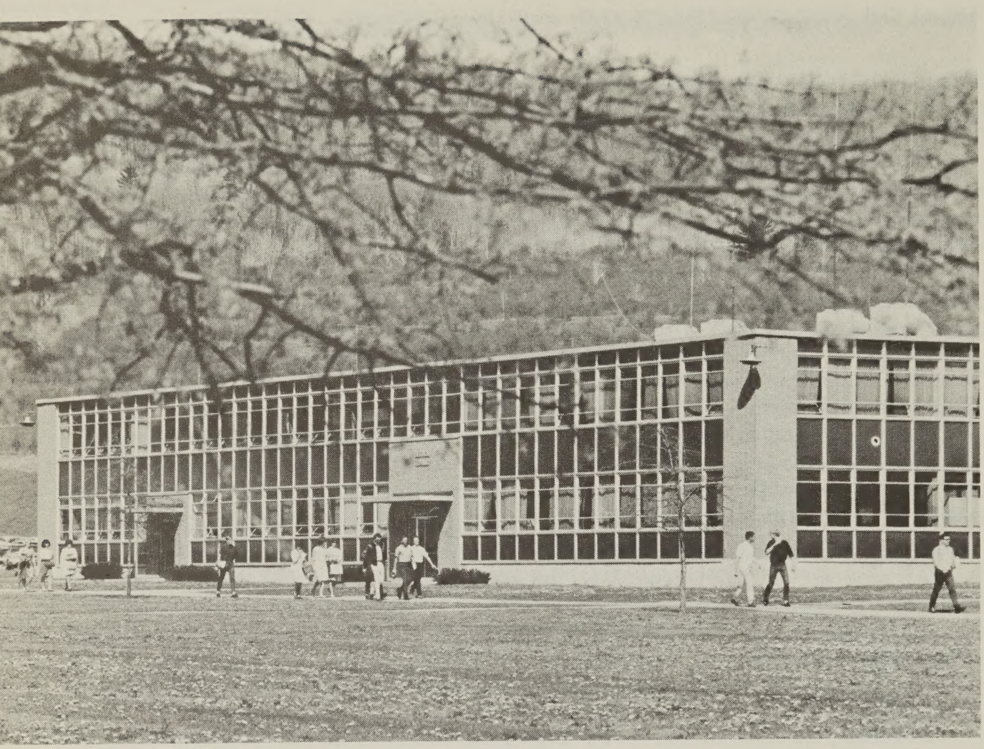
SPECIAL PROGRAMS

PRE-TECH

Students who either lack the minimum requirements for admission to the regular programs of the College, or those who have been out of school for several years, may request enrollment in the Pre-Tech course. This is a year-long sequence of study emphasizing the fundamental concepts of English, mathematics and science. Students in this program are not considered regular college students and few college credits are granted for completion of these courses. At the end of the year, students are evaluated by the faculty and must be recommended for entrance to a regular program before being admitted in the subsequent year. (See page 52.)

NURSING

Nurses in training at Binghamton General and Binghamton State Hospital take part of their first year of study at Broome Tech. Under this program these students may participate in all activities of the College.



EXTENSION DIVISION

Credit courses for adults are offered year-round during the evenings and during the Summer Day session. An adult may enroll in any evening course if, in the College's judgment, he has the ability to do college-level classwork and if he has the necessary prerequisites for the course.

Evening Program

Evening courses lead to various Extension Division Diplomas (32 semester credit programs in Business; Chemical, Civil, Electrical, and Mechanical Technologies; Production Management; as well as General Studies). These Extension Division Diplomas are the bases of required study for the Associate in Applied Science Degrees in Business and in Industrial Technology, and the Associate in Arts Degree.

Summer Session

Summer credit courses, many of which can be accepted by other colleges for transfer, are available during the days. Developmental and college preparatory subjects are also available as non-credit offerings.

The evening terms begin September 12, 1966, and January 23, 1967; the summer semester starts July 5, 1967. Full details about these programs are contained in the Catalog available on request from the College's Extension Division.

ADMISSION

A high school diploma or equivalent is required for entrance to all curriculums. All applicants must take the Scholastic Aptitude Test of the College Entrance Examination Board, and must meet the minimum requirements of physical ability required by the occupational field in which they wish to engage. They must also be recommended by their high school principal or guidance counselor.

Application Procedure

New students are admitted only at the beginning of the school year. However, applications will be accepted at any time.

An application for admission must be made on official forms supplied on request by the Admissions Office.

A deposit of $10 must accompany each application. The deposit is non-refundable but is applied as an advance payment on the student activity fee if the application is accepted. Once a student is accepted, he will be billed for an advance payment of $50 on tuition. This is also non-refundable.

The Committee on Admissions may require an applicant to participate in an admissions counseling interview. Counseling interviews are not required of all applicants, but they may be requested by the applicant.

Readmission or Transfer

Applicants for readmission or transfer to the College must be submitted to the Admissions Office prior to three weeks before the start of the term in which the applicant is requesting readmission. Applications received later than the above period may be returned to the applicant by the Director of Admissions without processing.

Part-Time Students

Enrollments on a part-time basis during day school hours will be on a strict space-available basis. Registration will be conducted by the Extension Division and generally will be held the first day of the term at 8 a.m. in the Student Center.

Individuals may register for part-time day enrollment for a maximum of 6 term credit hours by applying directly to the Director of the Extension Division at registration time. In exceptional circumstances, applicants will be permitted to enroll for a maximum of 12 term credit hours, subject to the approval of the Admissions Committee of the College.

A part-time day student will not be permitted to enroll in the subsequent day term if in day courses he has received two "F" grades, two "P" grades, or a "P" and an "F" grade in one day term or in two consecutive day terms. Exceptions to this policy may be considered for unusual circumstances. In these cases students must petition in writing the Director of Extension, who will make final determination.

Part-time students who withdraw from courses must complete the proper termination procedures at the Extension Division office.

All individuals admitted on other than a full-time basis will be considered Extension students, subject to policies governing students in the Extension Division, in addition to regulations governing full-time students. Such enrollment does not automatically make the enrollee a candidate for an Associate Degree.

Entrance Requirements

In planning for college, it is advisable that each high school student enroll in a college preparatory curriculum. The following table should help in planning a high school program.

Curriculum	**Recommended High School Subjects**	**Other Desirable High School Subjects**
Business	*2 units Mathematics 2 units Science	College preparatory courses
Chemical	Chemistry *3 units Mathematics including Trigonometry	Physics, Additional Mathematics, Technical courses
Civil	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Dental Hygiene	*2 units Mathematics Biology, Chemistry	Social Studies
Electrical	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Engineering Science	Chemistry, Physics *3½ units Mathematics incl. Advanced Algebra	Additional Mathematics, Science and Technical courses
Liberal Arts and Sciences	*2½ units Mathematics 4 units in any combination of science, language, or additional Mathematics	College preparatory courses
Mechanical	Physics *3 units Mathematics including Trigonometry	Additional Mathematics, Technical courses
Medical Laboratory Technology	*2 units Mathematics 2 units of Laboratory Science	Typing, Additional Mathematics and Science
Medical Office Assistant	*2 units Mathematics 2 units Science	Typing, Additional Mathematics and Science
X-ray Technology	*2 units Mathematics 2 units of Laboratory Science	Typing, Additional Mathematics and Science

* Academic units of mathematics such as algebra, geometry or trigonometry.

NOTE—Applicants who do not satisfactorily meet the entrance requirements may apply to enter the Pre-Tech program. This preparatory year program provides opportunity for the student to strengthen his academic background so that he may enter any full-time program of the College with a better expectation of successful accomplishment.

Late Registration

An applicant may not register later than one week after the beginning of the fall term except by permission of the Dean of the College.

Advanced Standing Students

Transfer of credit from students who have been enrolled in other accredited colleges is subject to the approval of the chairman of the student's major department and the Registrar. Students who have attended one or more other colleges must in all cases submit an official transcript of work taken to the College Admissions Office before formal acceptance will be granted.

Credit by Examination

Advanced Placement Examinations and College Proficiency Exams:

Applicants who have completed any of the Advanced Placement Examinations sponsored by the College Entrance Examination Board or the College Proficiency Examinations sponsored by the University of the State of New York may apply for credit and advanced placement. Such requests will be handled similar to transfer credit and will be granted where applicable, subject to the approval of the department chairman and Registrar.

ACADEMIC STANDARDS AND REGULATIONS

Requirements for Graduation

THE ASSOCIATE IN APPLIED SCIENCE DEGREE

1. Degree requirements: a minimum of 96 quarter credits
2. Curriculum requirements:
    - a) A minimum of 60 credits in a student's major field. These are courses intrinsic to and required by the various curriculums.
    - b) A minimum of 30 credits in general education or liberal arts courses.
        - 1) Social Sciences: a minimum of 9 credits
        - 2) Biological and Physical Sciences (including Mathematics): a minimum of 9 credits
        - 3) Humanities: a minimum of 9 credits in English (composition and/or speech)
        - 4) Electives (or additional courses) in the foregoing fields comprising a minimum of 30 credits in the liberal arts and sciences or general educational areas
    - c) Satisfactory completion of all courses in a curriculum or as approved in a department
3. Quarter point averages must total 8.60 for a six-quarter program or the equivalent thereof
4. Satisfactory completion of required co-operative work periods for Electrical and Mechanical Technology students
5. Recommendation of the faculty for the awarding of the degree
6. Satisfaction of all obligations to the College

THE ASSOCIATE IN ARTS DEGREE

1. Degree requirements: a minimum of 93 quarter credits (in addition to physical education)
2. Curriculum requirements: a minimum of 72 credits distributed as follows:
    - a) Social Sciences: a minimum of 18 credits
    - b) Biological Sciences and Physical Sciences: a minimum of 12 credits
    - c) Mathematics: a minimum of 9 credits (this requirement may be satisfied if candidate has completed 3½ units of secondary mathematics through Advanced Algebra or the equivalent)
    - d) Humanities: a minimum of 27 credits, of which 18 shall be in English (composition, speech, and literature) and 9 of which shall be in other subjects in the humanities
    - e) Electives: 80% shall be in the fields of study listed above
    - f) Physical Education: a minimum of 6 credits. Exception to this requirement may be made by the Dean of the College
    - g) Satisfactory completion of all courses in a curriculum or as approved in a department
3. Quarter point averages must total 8.60 for a six-quarter program or the equivalent thereof
4. Recommendation of the faculty for the awarding of the degree
5. Satisfaction of all obligations to the College

Grades

Grade	Honor Points Per Credit Hour	Explanation
A	4	Outstanding achievement in meeting the objectives of the course
B	3	Above average achievement
C	2	Average achievement
D	1	Below average achievement
P	0	Poor achievement—no honor points
F	0	Failure to meet the objectives of the course
W	0	Withdrawal from course within first four weeks of term.
I	0	Incomplete. Work to be made up within one week or by special arrangement with the department
S	0	Satisfactory. (Final grade for a non-credit course or a mid-term grade in a credit course to denote a student's progress.)

Transfer to Senior Institutions

Students desiring to transfer are encouraged to consult with their faculty advisor, department chairman or a representative from the Student Personnel Office for assistance in selecting colleges that are appropriate in terms of their goals and demonstrated college achievement.

Broome Technical Community College will not as a general rule encourage students who have less than a C (2.0) average to transfer to other colleges.

An applicant for transfer who will not complete the requirements for the Associate Degree at Broome Technical Community College prior to the time of anticipated transfer may not be recommended for transfer, if the faculty of the college feel the applicant has not completed a desirable breadth or depth of study to provide suitable criteria for measuring academic ability.

The following procedures are to be followed by students desiring transfer:

1. Initiate an application to transfer by applying directly to the college. Applications should be submitted during December and January of the second year. Applications submitted after these dates involve the risk of being deferred or returned due to lack of space at the four-year college.

2. Fill out Section I (in duplicate) of the Transfer Record Form in the Student Personnel Office. Students in Liberal Arts and Sciences, Engineering Science and the Business Administration curriculums will be requested to complete the Transfer Record Form regardless of their intention to transfer immediately upon graduation from Broome Tech.

3. Complete a Request For Transfer of Academic Record Form in the Student Personnel Office for each college to which they are applying.

4. Forward request for references or recommendation forms from other colleges to the Student Personnel Office.

Please review these procedures carefully. Omission of any step would result in a delay of your records being forwarded to another college. If you have any questions regarding the above procedure, consult with the Student Personnel Office.

Scholastic Standing

To remain in satisfactory standing, a student must earn a point average of 1.2 the first term, 1.4 the second, 1.5 the third term, and 1.5 for each succeeding term until graduation.

Any student who does not maintain this minimum point average in any term is placed on probation for the following "on campus" term.

In order for a student to remain in good standing, he must also demonstrate mature attitude, interest and cooperation.

Grades are issued at the end of each term. Students will also be notified of their academic standing at the approximate mid-point of each term. Satisfactory progress will be denoted by an "S" letter grade. Progress below average (below C) will be denoted by an appropriate letter grade.

A student who wishes to repeat courses already taken at Broome Tech should secure permission from his department chairman or advisor and should ask that the College policy on repeating courses be explained.

Residence Requirements

Students transferring from other colleges will, as a general rule, be expected to complete a minimum of one year's work at Broome Tech, immediately prior to being granted the Associate Degree.

Honors

At the end of each term, students who have earned an average of 3.5 or better are named to the President's List. Those with averages between 3.0 and 3.49 are placed on the Honor Roll.

Attendance Regulations

Every student is expected to attend all sessions of classes and laboratory work for which he is registered, and all absences and tardinesses will be recorded.

Excuses for absences will be granted in accordance with instructions outlined in the Student Handbook. Unexcused absences from classes may be considered valid reason for dismissal or other disciplinary action.

Withdrawal from the College

A student compelled to withdraw at any time must immediately notify the Student Personnel Office and complete the proper termination form. Failure to comply with this regulation will cause the individual to forfeit his right to honorable dismissal and to lose any refund of fees.

Withdrawal from Course

A student permitted to withdraw from a course during the first two weeks of the term will have no indication of such registration on his permanent official college record.

If a student is permitted to withdraw during the third or fourth week he will have W's entered on his permanent record.

If a student is permitted to withdraw from a course beyond the fourth week, he will receive an F grade.

If, for reasons of health or circumstances beyond his control, the student is counseled by his department chairman and the Dean of the College to drop a course, he will receive a W.

GENERAL INFORMATION

EXPENSES

Tuition

For New York State residents .... $300 per year
(Payable at the rate of $100 per term)

For out-of-state residents .... $600 per year
(Payable at the rate of $200 per term)

Tuition for all students is payable at the beginning of each of the first three quarters of the school year, regardless of cooperative work assignment.

The responsibility for payment of tuition rests upon the student. At the beginning of each school year, the College advises parents of the initial required payment, but this is usually not done in subsequent quarters. Students will be suspended from classes if the established due dates for payment are not met.

Fees

Tuition and fees are payable at the Finance Office. All students will be required to pay their tuition and fees for the first quarter by September 2. Any refund is at the option of the College.

The following fees will be charged, with the College reserving the right to change any of them:

STUDENT ACTIVITY .... $38 per year

The $10 deposit required with the application becomes advance payment on the activity fee, if the applicant is accepted. The activity fee entitles students to admission to varsity games, dances and parties, as well as a subscription to the student newspaper (Tech Talk) and the opportunity to participate in a varied program of co-curricular activities, including intramural athletics.

Students enrolled for less than 12, but more than 6, credit hours in a given term will be assessed at the rate of $1 per credit hour for their student activity fee. These students will not be entitled to a free copy of the college yearbook, The Citadel. In no case should any student be charged more than the full-time student activity fee of $38 in any academic year.

HEALTH .... $23 per year

This fee covers the cost of the student health insurance program. If a student is covered under his family's health insurance, however, a statement to this effect will be accepted instead of the health fee, if the statement is signed by a parent or by the student, if he or she is of age. This statement should cite the name of the insurance program under which the student is covered, and it should be turned in to the Finance Office.

GRADUATION $20

This fee is paid at the start of the term preceding graduation. One half is for life membership in the Alumni Association.

REGISTRATION .... $10 per term

LABORATORY

Refundable .... $10 each year to cover breakage in Chemistry and Physics. If breakage is less than $10 worth, then appropriate amount is refunded.

Non-refundable .... $ 5 per term for each Chemistry laboratory course for use of materials.

Books and Supplies

Each student provides at his own expense the necessary books and instructional materials. These may be purchased at the Book Store maintained by the Faculty-Student Association for the convenience of the students. The cost varies, depending on the curriculum, from about $45 to $125 per year.

Uniforms and dental instruments for Dental Hygiene students will cost approximately $100.

Living Accommodations

The College does not maintain dormitories. Local students, of course, live at home. Out-of-town students are required to live in rooms which have been inspected and approved by the College. Lists of approved rooms are maintained by the Student Personnel Office, and students are assisted in finding suitable living quarters.

Board and Room

The cost of board and room for out-of-town students is dependent upon the demands of the student. The average cost varies from $25 to $35 per week.

Length of Curriculum

All associate degree programs are two years in length. The college year is divided into four terms of approximately eleven weeks each. Students enrolled in the cooperative work curriculums—Electrical Technology and Mechanical Technology—spend a total of six terms on campus and two terms in industry. Students in the other curriculums spend three terms on campus each year.

Cooperative Work Program

In the Cooperative Work Program, students are placed in jobs related to their major field of study for two employment periods. Students are paid the prevailing wages for the jobs they do. Cooperative students in the Electrical and Mechanical Technology curriculums earn about $800 to $1200 during each cooperative period.

The program offers other distinct advantages:

1. It is exploratory. The student has a chance to survey and evaluate a number of different jobs within his field. At the same time he can take stock of his own abilities and interests.
2. It is an opportunity to correlate classroom studies with actual work experience.
3. It is a means of demonstrating the importance of human relations in the work situation.

Cooperative work students are expected to "earn their own way," to perform the duties required without special favor. At the end of the period, employers submit a report covering the students' performances.

Dismissal

Students may be considered for dismissal for the following causes: More than one consecutive probationary period, more than one failing grade in a term, failure to earn a point average of 1.0 in any term, irregular attendance, neglect of work or financial obligations, failure to comply with College rules and regulations or official notices, conduct unbecoming a student.

Any action leading to the requested withdrawal of a student is taken up by the Executive Committee. Any student may petition his department staff to waive the academic requirements of the College leading to dismissal; such petitions are acted upon by the Executive Committee upon their presentation by the department concerned. The College reserves the right to be the sole judge in all matters pertaining to dismissal.

Students who are dismissed from the College will not be permitted to re-enroll in the day school term subsequent to the dismissal action.

ALUMNI

Graduates who are working in the area are urged to take advanced courses offered in the Evening Extension Division.

Transcripts

Each graduate is entitled to two transcripts of his work completed at the College. One dollar is charged for each additional transcript.

Alumni Association

All graduates of the College now automatically become paid-up lifetime members of the Broome Tech Alumni Association, which is legally a division of the Faculty-Student Association so that it too is organized on a non-profit corporate basis.

The association has its own officers, board of directors and paid executive secretary, and its primary purpose is to provide a link between the College and its graduates. A bi-monthly printed Alumni Newsletter helps to accomplish this objective by providing alumni with news of the college as well as information about other graduates.

The Alumni Association actively supports the College's scholarship program and conducts programs for its members throughout the year, such as the annual Alumni Dinner-Dance.

FACULTY-STUDENT ASSOCIATION

The Faculty-Student Association of Broome Technical Community College, Inc., is an educational corporation designed to provide to the College, and particularly to the students and faculty, services that are not provided for in the regular College budget.

It provides the corporate organization through which the student fees are expended under a budget prepared by the Student Council and such other organizations as the Athletic Board of Control and the Convocation Committee. It also operates the College Bookstore and the cafeteria.

Through the modest earnings of the bookstore the income from student fees is augmented to support new or special activities and to obtain needed equipment.

The association is governed by a board of directors elected by members who are certain student and faculty members, identified by the offices they hold on campus.

The operating philosophy is to make the educational program outside of the classroom a well-rounded supplement to the academic experience of the student.

CONVOCATIONS

Speakers in a diversity of fields are brought to the campus during the school year as part of the College's convocation program. These convocations are considered a phase of the academic curriculum, although they are scheduled apart from the regular classroom program.

Such nationally known figures as James Farmer, former director of CORE; syndicated advice columnist Ann Landers; Pulitzer-prize winning reporter Haynes Johnson; and Jim Fowler of the TV "Wild Kingdom" show appeared at convocations last year.

Other noted speakers who have been here for convocations include television writer Rod Serling, former Congressman Walter Judd, and author Vance Packard.

FINANCIAL AID

More and more financial aid is becoming available for young people seeking a college education, with the result that fewer men and women are being denied the advantages of higher education because of the costs.

Financial aid at Broome Technical Community College falls into three broad categories—awards, loans, and part-time work. The awards are scholarships and grants that do not have to be repaid; the loans must be paid back but the repayment plans are lenient and the interest rates low; part-time work is arranged through the College and coordinated with the student's academic schedule.

A significant achievement in financial aid during the past year has been the College's new affiliation with the College Scholarship Service (CSS) of the College Entrance Examination Board.

Participants in CSS subscribe to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists colleges and universities and other agencies in determining the student's need for financial assistance.

Entering students seeking scholarship assistance are required to submit a copy of the Parents' Confidential Statement (PCS) form by April 15 to the College Scholarship Service, designating Broome Technical Community College as one of the recipients. For National Defense Student Loan candidates, August 15 is the deadline date. The PCS form may be obtained from a secondary school or the College Scholarship Service, P.O. Box 176, Princeton, New Jersey 08540.

The Broome Technical Community College Foundation

The College has established this Foundation to help students overcome the economic barriers. It has established a Scholarship Fund by enlisting the cooperation of industries, organizations and individuals in the community. Their contributions are administered by the Foundation to assist needy and qualified students. About 75 scholarships and grants of at least $200 are made possible each year by the Foundation.

AWARDS

Scholar Incentive Awards

Most students attending Broome Technical Community College who are New York State residents are eligible for a Scholar Incentive Award. The award is a direct grant payable to the student each term and amounts to approximately $100 for the academic year.

It is the individual student's responsibility to obtain and complete the necessary application forms. These may be obtained from the University of the State of New York, The State Education Department, Regents Examination and Scholarship Center, Albany, New York 12224. For fall benefits, applications should be filed before July 1, but will be accepted up to December 1. The deadline date for winter and spring applications is April 1. Students must apply once a year.

New York State Regents Scholarships

Recipients of New York State Regents Scholarships may use them at the College, although the Regents Scholarship for Engineering and Scientific Studies is applicable only to the Engineering Science Program.

Federal Government Grants

Educational Opportunity Grants are available to exceptionally needy students under the provisions of the Higher Education Act of 1965.

Service veterans with at least six months of active duty since January 31, 1955 are eligible to receive at least $100 a month for full-time study from the Federal government, under the new Veterans Readjustment Benefits Act of 1966.

More information is available in the Financial Aids Office.

Scholarships

About 75 scholarships and grants-in-aid of about $200 each have been established to recognize outstanding scholarship and/or financial need of applicants to Broome Technical Community College. These awards are made primarily to entering freshmen students to help defray most or all of the first year's expenses. Students may apply for these grants at the time of making application for entrance to the college.

Contributors to the scholarship fund of the Broome Technical Community College Foundation include:

Administrative Management Society, Triple Cities Chapter
American Society for Quality Control
Ansco Division of General Aniline & Film Corporation
The Azon Corporation
Binghamton Container Company, Inc.
The Binghamton Savings Bank
Broome Tech Alumni Association
Broome Tech Administrative Management Society Chapter
Broome Tech Women's Club
Chernin & Gold, Attorneys
Clark-Cleveland, Inc.
Conrad & Virginia Klee Foundation, Inc.
Crowley's Milk Company
David E. Meade Scholarship Awarded by Kiwanis Club of Binghamton
Endicott Forging & Manufacturing Co.
First-City National Bank
International Business Machines Corporation
Link Group of General Precision, Inc.
Marine Midland Trust Company
New York State Electric & Gas Corp.
Ozalid Division, General Aniline & Film Corporation
Mr. and Mrs. Richard Parish
Mr. and Mrs. Charles Pierson
Public Loan Company, Inc.
Scintilla Division, Bendix Aviation Corporation
Stow Manufacturing Company
E. H. Titchener & Company
Universal Instruments Corporation

Endowment Fund Scholarships

Individuals and industrial and professional organizations have donated and/or willed money to the Broome Technical Community College Scholarship Endowment Fund. This money is invested to produce interest or dividends that are used to establish scholarships. Nine scholarships of $200 each from this source are:

Neva M. Ash Memorial Scholarship. Miss Ash served with distinction in many capacities on the faculty from the first days of the College in 1947 until her death in 1963.

Bernard H. Chernin Scholarship.
Leopold Eckler Scholarship. These two scholarships are given in recognition of the outstanding contributions these two men have made to the College as members of its Board of Trustees, of which both are now emeritus members.

Donald W. Emmons Memorial Scholarship. Mr. Emmons, a highly respected member of the faculty, served the College from 1947 until his death in 1964.

Dr. James T. Ivory Memorial Scholarship. Dr. Ivory was one of the original members of the Board of Trustees and the only one still serving at the time of his death in April 1964. He had been a tireless worker on behalf of the College, and the Dental Hygiene Clinic was renamed in his honor shortly after his death.

Mrs. Charles F. (Jeanette) Johnson Memorial Scholarship. Mrs. Johnson and her husband were both devoted supporters of education and of local institutions. Her support of Broome Tech began in the early days of the College's Student Aid Association and continued until her death.

S. David Molyneaux Memorial Scholarship. Dr. Molyneaux was a highly respected member of the faculty from 1959 until his death in 1963. Moreover, he served the community's cultural and scientific needs with an unusual dedication that won him many friends and much respect.

Paul F. Titchener Memorial Scholarships (2). Mr. Titchener was chairman of the College's Board of Trustees from the day it first met in 1947 until he resigned in 1957. He was instrumental in having the state establish a two-year college in Binghamton in 1947, and he continued to serve as a trustee until his death in 1963.

Special Scholarships

Following are contributors to specially designated scholarships:

Athletic Board of Control Awards. Two $750 scholarships to out-of-town applicants who can meet all entrance requirements and have financial need and outstanding ability as a basketball player.

Alumni Athletic Award. The Broome Tech Alumni Association grants two $750 scholarships to out-of-town applicants who can meet all entrance requirements and who in addition have financial need and have shown outstanding ability as a basketball player.

Binghamton Chapter, National Secretaries Association Scholarship. Established in 1954. One scholarship of $200 to be awarded to a young lady graduate of one of the Broome County high schools entering a secretarial option of the Business curriculum. Recipient to be judged on the basis of scholastic ability, character, personality and financial need.

Broome County Association of Highway Officials. An annual award of $300, with $200 to be given the first year and $100 for the second year. Awarded to a graduate of a Broome County high school, and the recipient must be a resident of Broome County.

Broome County Dental Society Scholarship. One scholarship of $100 and a plaque awarded at capping service to a Dental Hygiene student who showed outstanding ability and campus leadership during her freshman year.

Broome County Medical Society Scholarship. An annual award of $200 to that student completing the first year in the Medical Office Assistant program who has been selected by the faculty on the basis of aptitude, initiative and scholarship.

Civic Club of Binghamton Award. Established in 1953. Awards of $125 are given to three young women, graduating from one of the Binghamton high schools and wishing to enter the college.

Ellis and Gladys Klepfer Scholarship. A $200 award to an applicant who can meet all entrance requirements, and who in addition has financial need and has shown outstanding ability as a basketball player.

Endicott Rotary Club Scholarship. An annual award of $300 granted to a graduate of Seton Catholic High School or Union-Endicott High School in the city of Endicott.

Fairbanks Company Scholarship. Two $400 awards are made annually, one to a son and one to a daughter of a Fairbanks Company employee. Three additional $400 awards are made, one each to a graduate of Binghamton North High School, Binghamton Central High School and Catholic Central High School in Binghamton. The Scholarship Committee of the College will select the recipients, and $200 of each award will be distributed each year to them. The eligible applicants must file an application form before May 1 and prior to admission to the College. Withdrawal from the College will terminate the award.

Irving Schwab Memorial Scholarship. A $300 award to an applicant who can meet all entrance requirements, and who in addition has financial need and has shown outstanding ability as a basketball player.

Johnson City Lions Club Scholarship. Annual award of $200 awarded to a graduate of Johnson City High School.

Lou Rappaport Freshman Scholarship. One scholarship of $200 to be given to a worthy student graduating from Chenango Valley Central School.

Walter C. (Bud) Rose Scholarship. An award of $600 to a Civil Technology student preferably a graduate of Chenango Valley Central School. The scholarship committee will select the recipient on the basis of scholastic ability, character, personality and financial need.

Sales & Marketing Executives of the Southern Tier Award. This is an award of $200 to be given to a freshman at the end of his first year at Broome Tech who elects the Business-Marketing Option in his senior year. The recipient is to be chosen on the basis of need, character and scholastic ability. If the committee feels that two students meet this criteria, the award may be divided.

Triple Cities Business and Professional Women's Club Award. Established in 1954. An award of $600 is given to one or two young women. The recipient is selected from the graduates of one of the following schools:

Binghamton Central High School
Binghamton North High School
Binghamton Catholic Central High School
Chenango Valley Central School
Johnson City High School
Susquehanna Valley Central School

Triple Cities Coin Club of New York State. A $100 award to assist a student who graduated from a Broome County high school.

Ken Wilson Chevrolet Award. A $300 award to a student who meets all entrance requirements and has financial need and outstanding ability as a basketball player.

Women's Auxiliary of the Broome County Dental Society. A fund established for a deserving student in the Dental Hygiene curriculum who might need assistance to complete studies at the College.

LOANS

Students enrolled at the College are eligible to borrow from either the New York Higher Education Assistance Corporation or from funds made available under the National Defense Loan program. The interest rates are a low 3% to the student in either instance, the maximum amount that can be borrowed is $1,000, and repayment doesn't have to begin until after graduation from either Broome Tech or any other college to which a student transfers. Repayment under the state program must start 60 days after one's college education is completed, while the Federal loans permit one nine months to begin repaying.

More information is available in the Financial Aids Office.

WORK OPPORTUNITIES

College Work-Study Program

The College Work-Study Program is available to all students who demonstrate financial need as defined by the Federal Government. Special emphasis is directed to students from low income families.

Work assignments vary within the College and include work in maintenance, laboratories and offices. The prevailing student wage for campus jobs is paid. During the normal school year work assignments are limited to 15 hours per week and during the summer 40 hours per week.

Applications for the College Work-Study Program may be obtained from the Financial Aids Office.

Cooperative Work Program

Students in the Electrical and Mechanical Technology curricula spend two terms in jobs related to their field of study. These are off-campus positions in industry. The College places the students in these jobs, and they are paid the prevailing wages for the work they do. Students earn about $800 to $1200 during each cooperative work period.

For more information on the Cooperative Work Program, see page 16.

Part-Time Jobs

Part-time work is also available at times throughout the academic year, aside from the College Work-Study Program. These jobs are both on and off-campus. Students desiring work should consult the Financial Aids Office.

JOB PLACEMENT

Many companies send representatives to the campus each spring to interview seniors about jobs immediately after graduation. This practice has grown to the point where 61 concerns conducted job interviews in 1966, almost twice as many as the previous year.

Leading national corporations were among those interested in Broome Tech graduates, as well as many local companies. The list included such major area employers as International Business Machines, New York State Electric & Gas Corp., Link, General Aniline and Film and practically all the banks in Broome County.

Such firms as Eastman Kodak, Xerox, DuPont, Argonne Laboratories, American Can Co., Dow Chemical and Corning Glass represented the national scene.

The job interviews are especially directed toward students in the occupationally-oriented Business program and the Electrical, Mechanical, Civil and Chemical Technology curricula.

In cooperation with the department chairmen, the Student Personnel Office coordinates permanent placement, including employment listings and appointments for interviews.

CURRICULUMS
# of the
COLLEGE

BUSINESS

The Business Department offers courses of study in five different areas. These are in engineering secretarial and executive secretarial work, accounting, marketing, and business administration. The first four are designed to prepare graduates for immediate employment, while the business administration option is for students who want to continue their education at a four-year college or university.

These programs were planned with the assistance of businessmen, accountants, administrative managers, comptrollers, auditors, sales managers, engineers and secretaries.

Employment in business and industry, as well as management training programs offered by banks, chain stores and insurance companies provide some of the best opportunities for a graduate of the accounting and marketing options. The business administration program also offers some employment opportunities to those students who decide to go to work instead of continuing their college education after graduation.

OCCUPATIONAL PROGRAMS

Engineering Secretary

Graduates of this option can obtain immediate employment as stenographer-secretaries, technical secretaries or as private secretaries. They are in demand when industry or government needs secretarial help that can understand the specialized language of engineering. Since these students study science and engineering terminology in addition to their business skills, they are well prepared to work on engineering reports, records and correspondence.

Executive Secretary

These graduates are expected to find opportunities as secretarial assistants in the professions, as well as in government and with business firms. Students in this option may elect courses from other fields of study in the College consistent with their interests and vocational goals.

Accounting

Students taking this option receive their training in such basic areas as cost accounting, internal auditing, machine accounting and tax accounting. Graduates have successfully taken positions in banks, industrial firms, public accounting, and private business.

Marketing

Students taking this option should have an interest and personality suited to a career as a salesman. Employment opportunities are generally found in sales of services, equipment, insurance, and products at the wholesale level. This program is not designed to prepare one for retail selling.

TRANSFER PROGRAM

Business Administration

This option is designed specifically to prepare graduates to continue their business studies at a four-year college or university. While offering maximum transfer potential toward a bachelor's degree in accounting or business administration, it still gives students preparation for employment if they should decide to work instead of to seek their baccalaureate degrees.

Business Administration • Accounting • Marketing

These 3 options have the same first year of study.

1st YEAR

Term 1			Hours Per Week Class	Lab	Credits
LA	801	English	3	0	3
LA	810	Psychology	3	0	3
MA	101	**Mathematics or LA 840 Philosophy	3	0	3
BU	161	*Typewriting or LA 805 American Literature	0-3	5-0	2-3
BU	101	Accounting	2	2	3
BU	145	Business Law	3	0	3
			14-17	7-2	17-18

Term 2			Class	Lab	Credits
LA	802	English	3	0	3
PH	100	Science or PH 102 Descriptive Astronomy	2-3	2-0	3-3
BU	162	Typewriting or LA 850 Political Science	0-3	5-0	2-3
BU	141	Business Mathematics	3	0	3
BU	102	Accounting	2	2	3
BU	146	Business Law	3	0	3
			13-17	9-4	17-18

Term 3			Class	Lab	Credits
LA	803	English	3	0	3
LA	830	Sociology	3	0	3
BU	151	Business English	3	0	3
BU	142	Business Statistics	3	0	3
BU	103	Accounting	2	2	3
BU	121	Finance	3	0	3
			17	2	18

*If a student has satisfactorily completed a Regents unit of Typewriting of 80% or equivalent, BU 162 Typewriting or LA 805 American Literature must be substituted.

**Students who satisfactorily completed Intermediate Algebra & Trigonometry or Mathematics 11 in secondary school will take LA 840 Philosophy instead of Mathematics.

Business Administration Option

2nd YEAR

Term 4			Class	Lab	Credits
LA	145	Development of Western Civilization	3	0	3
LA	155	Economics	3	0	3
BU	204	Intermediate Accounting	2	2	3
BU	207	Cost Accounting	2	2	3
MA	110	College Algebra	3	0	3
			13	4	15

Term 5			Class	Lab	Credits
LA	146	Development of Western Civilization	3	0	3
LA	156	Economics	3	0	3
BU	205	Intermediate Accounting	2	2	3
BU	208	Cost Accounting	2	2	3
MA	111	College Algebra	3	0	3
			13	4	15

Term 6			Class	Lab	Credits
LA	147	Development of Western Civilization	3	0	3
LA	157	Economics	3	0	3
BU	206	Intermediate Accounting	2	2	3
LA	804	Effective Speaking	3	0	3
MA	104	Mathematics of Finance	3	0	3
			14	2	15

Accounting Option

2nd YEAR

		Hours Per Week		
Term 4		**Class**	**Lab**	**Credits**
BU 207	Cost Accounting	2	2	3
BU 230	Data Processing	2	2	3
BU 220	Payroll Accounting	2	2	3
LA 155	Economics	3	0	3
BU 272	Office Machines	1	4	3
BU 253	Personnel Administration	3	0	3
		13	10	18
Term 5				
BU 208	Cost Accounting	2	2	3
BU 231	Data Processing	2	2	3
LA 156	Economics	3	0	3
BU 249	Office Management	3	0	3
BU 222	Federal Tax	2	2	3
BU 221	Computer Programming	2	2	3
		14	8	18
Term 6				
LA 804	Effective Speaking	3	0	3
BU 232	Data Processing	2	2	3
BU 223	Internal Auditing	2	2	3
BU 250	Office Management	3	0	3
LA 157	Economics	3	0	3
BU 254	Industrial Organization & Management	3	0	3
		16	4	18

Marketing Option

2nd YEAR

Term 4				
BU 209	Distribution Cost	2	2	3
BU 290	Salesmanship	3	0	3
LA 155	Economics	3	0	3
BU 296	Credit	3	0	3
BU 292	Marketing	3	0	3
BU 253	Personnel Administration	3	0	3
		17	2	18
Term 5				
LA 804	Effective Speaking	3	0	3
BU 291	Sales Management	3	0	3
LA 156	Economics	3	0	3
BU 249	Office Management	3	0	3
BU 293	Advertising	3	0	3
BU 230	Data Processing	2	2	3
		17	2	18
Term 6				
BU 250	Office Management	3	0	3
BU 272	Office Machines	1	4	3
BU 295	Market Research	3	0	3
LA 157	Economics	3	0	3
BU 221	Computer Programming	2	2	3
BU 294	Advertising	3	0	3
		15	6	18

Engineering Secretary

Executive Secretary

These 2 options have the same first year of study.

1st YEAR

			Hours Per Week		
			Class	Lab	Credits
Term 1					
LA	801	English	3	0	3
BU	141	Business Mathematics	3	0	3
MA	101	**Mathematics or LA 805 Amer. Literature	3	0	3
BU	161	*Typewriting or LA 850 Political Science	0-3	5-0	2-3
BU	164	***Shorthand or LA 860 Language of Music	2-3	3-0	3
BU	101	Accounting	2	2	3
			13-17	10-2	17-18
Term 2					
LA	802	English	3	0	3
PH	106	Physics	2	2	3
BU	162	Typewriting	0	5	2
BU	165	Shorthand	2	3	3
BU	167	Transcription	2	3	3
BU	102	Accounting	2	2	3
			11	15	17
Term 3					
LA	803	English	3	0	3
LA	804	Effective Speaking (Executive Secretary)	3	0	3
		or		or	
PH	107	Physics (Engineering Secretary)	2	2	3
BU	163	Typewriting	2	3	3
BU	166	Shorthand	2	3	3
LA	810	Psychology	3	0	3
BU	103	Accounting	2	2	3
			15-14	8-10	18

*If a student has satisfactorily completed a Regents unit of Typewriting of 80% or equivalent, LA 850 Political Science must be substituted.

**Students who have satisfactorily completed Intermediate Algebra or Mathematics 11 in secondary school will take LA 805 American Literature instead of Mathematics.

***If student has passed a Regents unit of Shorthand of 80% or equivalent, LA 860 Language of Music must be substituted for Shorthand in first term.

Engineering Secretary Option

2nd YEAR

		Hours Per Week		
Term 4		Class	Lab	Credits
CH 180	Chemistry	3	2	4
BU 260	Technical Shorthand	2	3	3
BU 151	Business English	3	0	3
BU 220	Payroll Accounting	2	2	3
MT 101	Engineering Drawing	0	3	1
BU 253	Personnel Administration	3	0	3
		13	10	17
Term 5				
LA 804	Effective Speaking	3	0	3
BU 230	Data Processing	2	2	3
BU 261	Technical Shorthand	2	3	3
BU 145	Business Law	3	0	3
MT 129	Shop	1	3	2
BU 274	Office Practice	2	4	4
		13	12	18
Term 6				
LA 820	Economics	3	0	3
LA 830	Sociology	3	0	3
BU 262	Shorthand	2	3	3
BU 275	Office Practice	2	4	4
BU 146	Business Law	3	0	3
BU 254	Industrial Organization & Management	3	0	3
		16	7	19

Executive Secretary Option

2nd YEAR

Term 4				
LA 233	English Literature	3	0	3
LA 155	Economics	3	0	3
BU 270	Shorthand Dictation	2	3	3
BU 151	Business English	3	0	3
BU 253	Personnel Administration	3	0	3
LA 193	*Philosophy	3	0	3
		17	3	18
Term 5				
LA 234	English Literature	3	0	3
LA 156	Economics	3	0	3
BU 271	Shorthand Dictation	2	3	3
BU 145	Business Law	3	0	3
BU 274	Office Practice	2	4	4
LA 194	*Philosophy	3	0	3
		16	7	19
Term 6				
LA 235	English Literature	3	0	3
LA 157	Economics	3	0	3
BU 262	Shorthand	2	3	3
BU 146	Business Law	3	0	3
BU 275	Office Practice	2	4	4
LA 195	*Philosophy	3	0	3
		16	7	19

*If schedule can be arranged, a year of language may be substituted for the year of Philosophy.

CHEMICAL TECHNOLOGY

The Chemical Technology program is designed to prepare both men and women for industrial positions in chemistry, chemical engineering and allied occupations. Industrial positions are in the areas of research, development, analytical chemistry, pilot plant, production supervision, technical writing and sales.

Graduates are employed by both private industry and government agencies throughout the nation, and each year the demand for graduates continues to exceed the supply.

This program's primary emphasis is toward the occupational opportunities in this field. But some students each year have successfully transferred to the third year of a four-year college or university.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.

Chemical Technology

1st YEAR

		Hours Per Week		
Term 1		Class	Lab	Credits
LA 801	English	3	0	3
MA 140	College Algebra and Trigonometry	4	0	4
PH 140	Physics	3	2	4
CH 110	Chemistry	3	3	4
MT 102	Engineering Drawing	0	6	2
		13	11	17
Term 2				
LA 802	English	3	0	3
LA 830	Sociology	3	0	3
MA 141	Analytic Geometry and Calculus	3	0	3
PH 141	Physics	3	2	4
CH 111	Chemistry	3	3	4
		15	5	17
Term 3				
LA 803	English	3	0	3
MA 142	Analytic Geometry and Calculus	3	0	3
PH 142	Physics	3	2	4
CH 113	Chemistry	3	0	3
CH 131	Chemistry (Qualitative)	3	4	5
		15	6	18

2nd YEAR

Term 4				
	*Elective	3	0	3
CH 241	Quantitative Chemistry	4	9	7
CH 251	Organic Chemistry	3	6	5
CH 261	Chemical Engineering Stoichiometry	3	0	3
	or			
BI 101	***Biology	3	3	4
		13	15-18	18-19
Term 5				
LA 810	Psychology	3	0	3
MA 241	**Mathematics	0-3	0	0-3
CH 242	Quantitative Chemistry	3	6	5
CH 252	Organic Chemistry	3	6	5
CH 262	Chemical Engineering Unit Operations	3	3	4
	or			
BI 102	***Biology	3	3	4
		12-15	15	17-20
Term 6				
LA 820	Economics	3	0	3
CH 243	Instrumental Methods of Analysis	3	6	5
CH 253	Organic Chemistry	3	6	5
CH 263	Chemical Engineering Unit Operations	3	6	5
	or			
BI 103	***Biology	3	3	4
		12	18-15	18-17

*(Required)
AD 120 Computer Programming or
Liberal Arts Elective or
MA 240 Mathematics (with department chairman's approval)

**Optional; department chairman's permission is necessary

***A limited number of students may take BI 101, 102, 103 Biology in place of CH 261, 262, 263

CIVIL TECHNOLOGY

The construction industry, considering all related goods and services such as manufacturing and transportation, is the largest industry in the country. The unparalleled activity in construction has pointed up a severe shortage of technical personnel in this field.

This shortage has been made more acute by activation of new multibillion dollar state and federal highway programs, by the erection of new educational and industrial plants, and by the continued activity in home building. Civil Technology has been designed to help alleviate this shortage.

Graduates of this program are engineering technicians and are qualified to work as assistants to professional and supervisory persons such as engineers, architects, construction superintendents, surveyors and contractors.

Many openings exist in the federal, state and local governments. Other fields which attract graduates are sales of building materials and construction equipment, purchasing, testing of construction materials, drafting, estimating, specification writing, and inspection.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.

Civil Technology

1st YEAR

			Hours Per Week		
			Class	Lab	Credits
Term 1					
LA	801	English	3	0	3
MA	140	College Algebra & Trigonometry	4	0	4
PH	140	Physics	3	2	4
CH	104	Chemistry	3	2	4
MT	130	Manufacturing Processes	2	2	3
MT	110	Engineering Drawing	0	3	1
MT	151	Orientation	1	0	0
			16	9	19
Term 2					
LA	802	English	3	0	3
MA	141	Analytic Geometry & Calculus	3	0	3
PH	141	Physics	3	2	4
CT	119	Plain Concrete	2	3	3
MT	155	Applied Mechanics	3	0	3
BU	158	Construction Law	3	0	3
			17	5	19
Term 3					
LA	803	English	3	0	3
MA	142	Analytic Geometry & Calculus	3	0	3
ET	135	Electricity (DC)	3	2	4
CT	153	Strength of Materials	3	3	4
CT	110	Architectural Drawing	0	3	1
CT	140	Surveying	3	6	5
			15	14	20

2nd YEAR

			Class	Lab	Credits
Term 4					
LA	830	Sociology	3	0	3
		*Elective	0-3	0	0-3
ET	136	Electricity (AC)	3	2	4
CT	211	Architectural Drawing	0	3	1
CT	254	Strength of Materials	3	0	3
CT	141	Surveying	2	6	4
			11-14	11	15-18
Term 5					
LA	810	Psychology	3	0	3
		**Elective	0-3	0	0-3
CT	212	Architectural Drawing	0	3	1
CT	271	Environmental Sanitation	3	3	4
CT	220	Reinforced Concrete Design	3	3	4
CT	283	Route Surveying & Highway Design	3	3	4
			12-15	12	16-19
Term 6					
LA	820	Economics	3	0	3
CT	221	Structural Steel Design	3	3	4
CT	230	Building Design	3	3	4
CT	270	Soil Mechanics	3	3	4
CT	250	Estimating & Construction Planning	3	3	4
			15	12	19

*(Optional)
AD 120 Computer Programming or
MA 240 Mathematics

**(Optional)
CT 131 Heating, Ventilating &
Air Conditioning or
Mathematics MA 240 or 241

DENTAL HYGIENE

Dental hygienists are in great demand in this highly respected profession. Their services are performed in private dental practices, school systems, hospitals, industry and institutional dental clinics. Also in research programs, schools of dental hygiene, public health agencies, the Peace Corps and on the ship S.S. Hope. Regardless of the type of employment, one of the most important activities is that of constantly being a dental health educator.

Students learn to perform clinical, educational and assisting duties in a department that has the most modern equipment. The dental hygienist, who always works under the supervision of a dentist, is the only member of the auxiliary group in the dental profession who is licensed to perform services directly in the mouth of a patient; therefore, good manual dexterity is necessary. Sincere interest in working with people, good health, pleasing personality and good moral character are also important qualifications.

Dental hygiene duties, in compliance with respective state laws, include (a) the removal of deposits and stains on the teeth, (b) the application of fluoride solutions to the teeth, (c) individual and group dental health instruction, (d) exposing, processing and mounting of dental X-ray films, and (e) assisting the dentist at the dental chair and in the laboratory.

Graduates of Broome Tech's Dental Hygiene curriculum are eligible for a provisional dental hygiene teacher's certificate in New York State. They may also continue to study for a Bachelor of Science Degree in Health Education, for which a formal arrangement has been made with the State University College at Cortland, New York. Credits are also acceptable for transfer to other degree-granting colleges in the country.

The Dental Hygiene Department is equipped to handle limited numbers of students, so that applications should be submitted to the college at the beginning of the senior year of high school.

The cost of the books, supplies, smocks, uniforms, instruments and professional dues will total approximately $225 during the first year and approximately $185 during the second. Awards, scholarships and student loans are available through Broome Technical Community College.

The curriculum is fully accredited by the Council on Dental Education of the American Dental Association.

All dental hygienists must take a licensing examination in the state in which they wish to practice. New York and Pennsylvania specifically require the National Board examination, and 38 other states accept the results. Senior students are eligible to take this written examination in the spring before graduation.

They must also take a practical dental hygiene examination which is administered by the state in which they expect to practice.

Dental Hygiene

1st YEAR

		Hours Per Week		
Term 1		Class	Lab	Credits
BI 171	Anatomy and Physiology	3	2	4
BU 161	*Typewriting	0	5	2
CH 101	Chemistry	3	3	4
DH 100	Dental Hygiene and Ethics	2	0	2
DH 140	Dental Anatomy	2	2	3
LA 801	English	3	0	3
PE 109	First Aid	1	0	1
		14	12	19
Term 2				
BI 172	Anatomy and Physiology	3	2	4
BI 175	Histology and Embryology	2	2	3
CH 102	Chemistry	3	3	4
DH 101	Dental Manikin Practice	1	4	3
DH 141	Dental Anatomy	2	2	3
LA 802	English	3	0	3
		14	13	20
Term 3				
BI 159	Microbiology	3	4	5
DH 102	Dental Manikin Practice	1	4	3
DH 121	Hygiene	2	0	2
DH 153	Radiology	3	0	3
DH 158	Dental Office Practice	2	2	3
LA 803	English	3	0	3
		14	10	19

2nd YEAR

Term 4				
BI 285	Pharmacology	3	0	3
DH 204	Clinical Dental Hygiene	0	12	4
DH 244	Preventive Dentistry	3	0	3
DH 254	General Pathology	2	0	2
DH 283	Dental Health Education	2	2	3
LA 830	Sociology	3	0	3
		13	14	18
Term 5				
BI 287	Public Health	2	0	2
DH 205	Clinical Dental Hygiene	0	12	4
DH 255	Oral Pathology	2	0	2
DH 260	Dental Lab Practice	2	2	3
DH 261	Nutrition	3	0	3
DH 267	Anesthesia	2	0	2
DH 285	Health Services in Schools	3	0	3
		14	14	19
Term 6				
DH 206	Clinical Dental Hygiene	0	12	4
DH 264	School Organization	3	0	3
DH 268	Special Dental Practice	3	0	3
LA 804	Effective Speaking	3	0	3
LA 810	Psychology	3	0	3
LA 820	Economics	3	0	3
		15	12	19

*If a student has satisfactorily completed a course in Typewriting in the secondary school, a Liberal Arts course may be substituted.

ELECTRICAL TECHNOLOGY

Few people are unaware of what an important part electricity plays in our daily lives, in conveniences like radio, television, lighting and innumerable kitchen appliances.

But electricity is also one of the cornerstones upon which space exploration and our national defense are built. The amazing development of radar, electronics and solid state hardware is based on electricity.

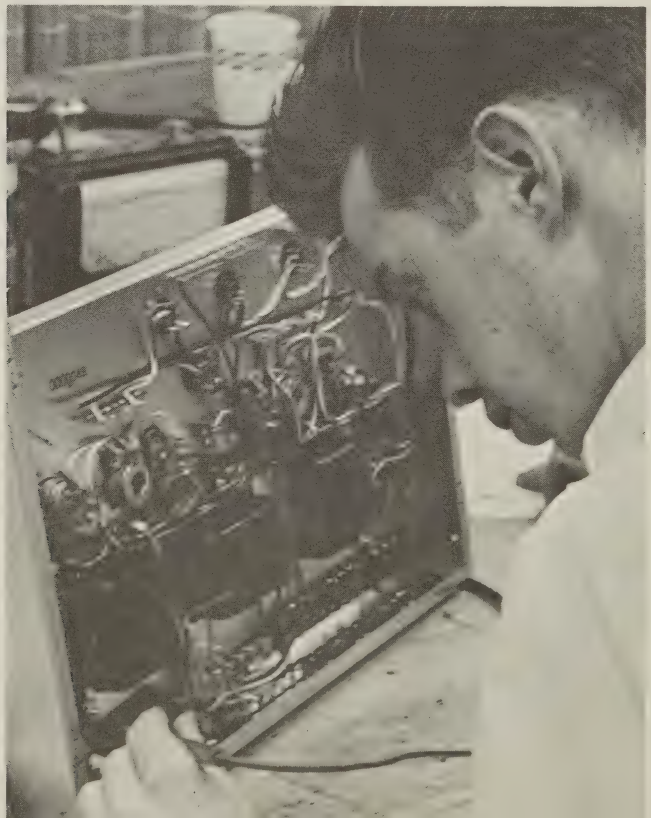
The recent rapid advances in electronics and related electrical fields have created a tremendous need for engineers, engineering technicians and specialists to meet the needs of national defense and the scientific economy and life of the future.

Two-year technical colleges, like Broome Tech, have become increasingly important in preparing better trained men for work in the electrical field. These colleges train men and women to do highly specialized technical work in half the time of a four-year college. Although few realize it, there is an excellent place for women in the electrical field.

Job opportunities are in such areas as electrical design drafting, technical sales, electronic computers, sonar and guided missiles. Graduates can also find employment in power generation and distribution, communications and the design and evaluation of electrical equipment.

Some of the companies that have hired Broome Tech Electrical Technology graduates in recent years are General Electric, Westinghouse, IBM, Bell Telephone, the Argonne Laboratories of the University of Chicago and New York State Electric and Gas Corp.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.



Electrical Technology

1st YEAR

			Hours Per Week		
			Class	Lab	Credits
Term 1					
LA	801	English	3	0	3
ET	104	Industrial Safety and First Aid	2	0	2
MA	140	College Algebra and Trigonometry	4	0	4
ET	101	Manufacturing Processes	1	3	2
ET	110	Physics (Fundamentals for Electricity)	4	3	5
ET	130	Engineering Drawing	0	3	1
			14	9	17
Term 2					
LA	802	English	3	0	3
MA	141	Analytic Geometry and Calculus	3	0	3
ET	102	Electrical Construction and Maintenance	1	3	2
ET	111	Physics (Electricity and Magnetism)	4	3	5
ET	112	Semiconductor Fundamentals	4	0	4
ET	131	Engineering Drawing	0	3	1
			15	9	18
Term 3					
LA	803	English	3	0	3
MA	142	Analytic Geometry and Calculus	3	0	3
ET	103	Electrical Construction and Maintenance	0	3	1
ET	132	Engineering Drawing	0	3	1
ET	120	Electrical Circuits	4	3	5
ET	250	Electronics	4	3	5
			14	12	18

2nd YEAR

			Class	Lab	Credits
Term 4					
LA	830	Sociology	3	0	3
		*Elective	3	0	3
ET	230	Electrical Design	0	3	1
ET	240	Electrical Machines	4	3	5
ET	251	Electronics	4	3	5
ET	223	Network Analysis	4	0	4
			18	9	21
Term 5					
LA	810	Psychology	3	0	3
		**Elective	3	0	3
ET	231	Electrical Design	0	3	1
ET	241	Electrical Machines	4	3	5
ET	252	Electronics	4	3	5
ET	261	Organization and Management	3	0	3
			17	9	20
Term 6					
LA	820	Economics	3	0	3
ET	232	Electrical Design	0	3	1
ET	253	Electronics	4	3	5
ET	242	Automatic Controls	4	3	5
ET	262	Industrial Relations	3	0	3
			14	9	17

*Required
AD 120 Computer Programming or
MA 240 Mathematics

**Required
Mathematics MA 240 or 241 or
ET 263 Engineering Economics

ENGINEERING SCIENCE

The level of work covered in the Engineering Science curriculum is primarily designed to prepare graduates to continue their studies in the engineering field in four-year colleges and universities. But there are also employment opportunities for qualified graduates.

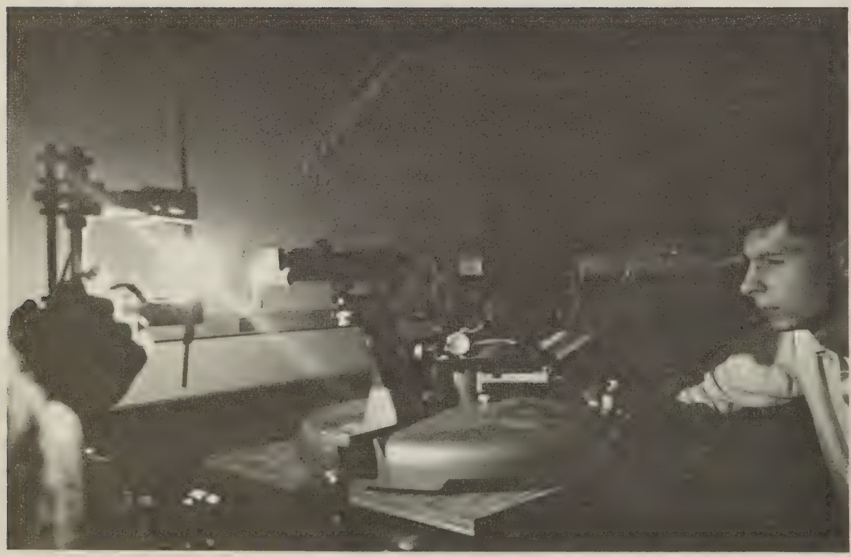
The emphasis in this program is on mathematics and physics, so that graduates can transfer to four-year schools into the junior year in such fields as physics, engineering and mathematics.

Students have recently transferred to engineering schools at such colleges and universities as Rensselaer Polytechnic Institute, Syracuse, Clarkson, New York University and State University at Buffalo.

Some of the job opportunities for those who prefer to seek immediate employment lie in the engineering technician field in such areas as assistants to engineers in research and development, and positions involving the application of mathematics.

In order for a high school graduate to qualify for admission to the Engineering Science curriculum, he or she must have shown high academic potential on the admission tests, and demonstrated superior ability in science and mathematics in high school.

Students entering Broome Tech who wish to continue studying for their bachelors' degrees in engineering, mathematics or physics will find this the most appropriate course of study.



Engineering Science

1st YEAR

Term 1			Hours Per Week Class	 Lab	 Credits
CH	110	Chemistry	3	3	4
LA	130	English Composition	3	0	3
MA	170	Analytic Geometry and Calculus	4	0	4
MT	103	Engineering Drawing	0	6	2
PH	170	Physics (Mechanics)	3	3	4
			13	12	17

Term 2			Class	Lab	Credits
AD	110	Introduction to Computer Programming	1	0	1
CH	111	Chemistry	3	3	4
LA	131	English Composition	3	0	3
MA	171	Analytic Geometry and Calculus	4	0	4
MT	112	Descriptive Geometry	1	2	2
PH	171	Physics (Mechanics and Heat)	3	3	4
			15	8	18

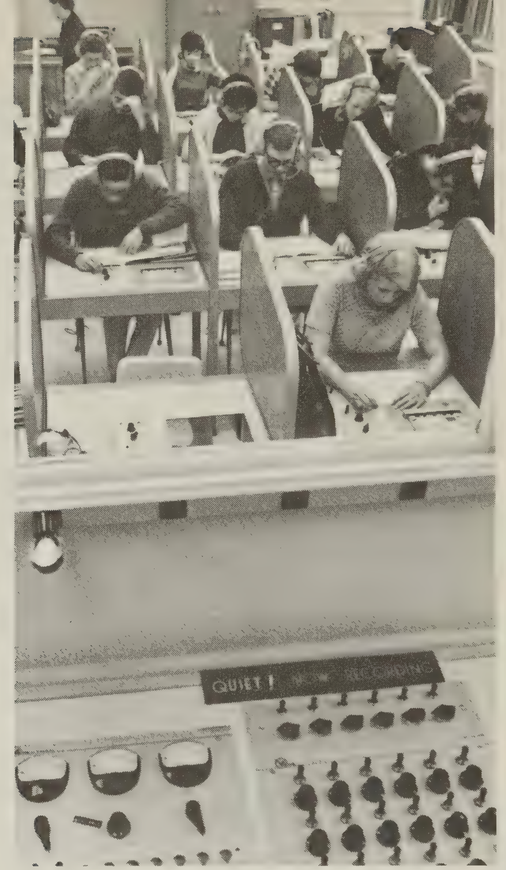
Term 3			Class	Lab	Credits
CH	112	Chemistry	3	3	4
LA	132	English Composition	3	0	3
MA	172	Analytic Geometry and Calculus	4	0	4
PH	172	Physics (Electricty and Magnetism)	3	3	4
PH	192	Statics	4	0	4
			17	6	19

2nd YEAR

Term 4			Class	Lab	Credits
LA	155	Economics	3	0	3
MA	270	Analytic Geometry and Calculus	3	0	3
MT	165	Metallurgy	3	3	4
PH	270	Physics (Light and Sound)	3	3	4
PH	290	Dynamics	4	0	4
			16	6	18

Term 5			Class	Lab	Credits
PH	210	Electrical Circuits	3	3	4
LA	156	Economics	3	0	3
MA	271	Differential Equations	3	0	3
MT	254	Strength of Materials	3	3	4
PH	271	Physics (Atomic)	3	3	4
			15	9	18

Term 6			Class	Lab	Credits
PH	211	Electrical Circuits	3	3	4
LA	157	Economics	3	0	3
MA	272	Differential Equations	3	0	3
MA PH	273 280	LaPlace Transforms or Astronomy	3	0-3	3-4
PH	272	Physics (Nuclear)	3	3	4
			15	6-9	17-18



LIBERAL ARTS AND SCIENCES

The Liberal Arts curriculum is primarily intended to enable a student to take the first two years of a four-year degree within the community college.

This is a two-year, university-parallel program designed especially for those who wish to continue their college education at a four-year college or university. It offers an Associate in Arts Degree.

Students finishing this curriculum have completed a breadth of education preparatory to such professional careers as law, medicine and education. A special science-emphasis option offers particularly appropriate preparation for students who plan to move from Broome Tech to pre-medicine, pre-dental or pre-pharmacy programs in four-year colleges.

The required and elective courses give the students essential credits in such areas as mathematics, language, science, social studies and the humanities.

This curriculum, moreover, can perform an exploratory function for many students. It is regarded as an ideal course of study for those who have not yet decided on a specific career. The program enables them to complete certain studies while they are making their career decisions.

Students entering Liberal Arts should give strong consideration to the foreign language elective. A survey reveals over 88% of the colleges in the United States now require two or more years of a foreign language for the Bachelor of Arts degree and 69% require two or more years of foreign language for the Bachelor of Science degree.

Liberal Arts and Sciences

1st YEAR

		Hours Per Week		
Term 1		Class	Lab	Credits
LA 130	English Composition	3	0	3
LA 145	Development of Western Civilization	3	0	3
	*Mathematics or Elective	3-4	0	3-4
	**Biology, Chemistry or Physics	3	3	4
	Language or Philosophy	3	0	3
PE 102	Physical Education	0	2	1
		15-16	5	17-18
Term 2				
LA 131	English Composition	3	0	3
LA 146	Development of Western Civilization	3	0	3
	*Mathematics or Elective	3-4	0	3-4
	**Biology, Chemistry or Physics	3	3	4
	Language or Philosophy	3	0	3
PE 101	Physical Education	0	2	1
		15-16	5	17-18
Term 3				
LA 132	English Composition	3	0	3
LA 147	Development of Western Civilization	3	0	3
	*Mathematics or Elective	3-4	0	3-4
	**Biology, Chemistry or Physics	3	3	4
	Language or Philosophy	3	0	3
PE 103	Physical Education	0	2	1
		15-16	5	17-18

2nd YEAR

		Class	Lab	Credits
Term 4				
LA 233	English Literature	3	0	3
	Social Science Elective	3	0	3
	Language or Elective	3	0	3
	Electives	6	0-2	6-7
PE 204	Physical Education	0	2	1
		15	2-4	16-17
Term 5				
LA 234	English Literature	3	0	3
	Social Science Elective	3	0	3
	Language or Elective	3	0	3
	Electives	6	0-2	6-7
PE 205	Physical Education	0	2	1
		15	2-4	16-17
Term 6				
LA 235	English Literature	3	0	3
	Social Science Elective	3	0	3
	Language or Elective	3	0	3
	Electives	6	0-2	6-7
PE 206	Physical Education	0	2	1
		15	2-4	16-17

*Students who have completed 3½ units of secondary school mathematics (through advanced algebra) may take a one-year sequence in place of mathematics.

**Students may defer science until the second year and in its place elect a social science course.

Liberal Arts
Science-Emphasis Option

Students who intend to continue their education in such fields as medicine, dentistry, pharmacy should take this option.

They should be advised that this curriculum presumes a high level of academic preparation in the secondary school. The student should consult with his faculty advisor when he is doubtful about the adequacy of his pre-college, academic preparation. Sciences may be chosen from Biology, Chemistry, and Physics.

1st YEAR

		Hours Per Week		
Term 1		**Class**	**Lab**	**Credits**
LA 130	English Composition	3	0	3
LA 145	Development of Western Civilization	3	0	3
	*Mathematics or Elective	3	0	3
	Science	3	3	4
	Science	3	3	4
PE 101	Physical Education	0	2	1
		15	8	18
Term 2				
LA 131	English Composition	3	0	3
LA 146	Development of Western Civilization	3	0	3
	*Mathematics or Elective	3	0	3
	Science	3	3	4
	Science	3	3	4
PE 102	Physical Education	0	2	1
		15	8	18
Term 3				
LA 132	English Composition	3	0	3
LA 147	Development of Western Civilization	3	0	3
	*Mathematics or Elective	3	0	3
	Science	3	3	4
	Science	3	3	4
PE 103	Physical Education	0	2	1
		15	8	18

*Students who have completed 3½ units of secondary school mathematics may enroll in an elective subject.

2nd YEAR

Term 4

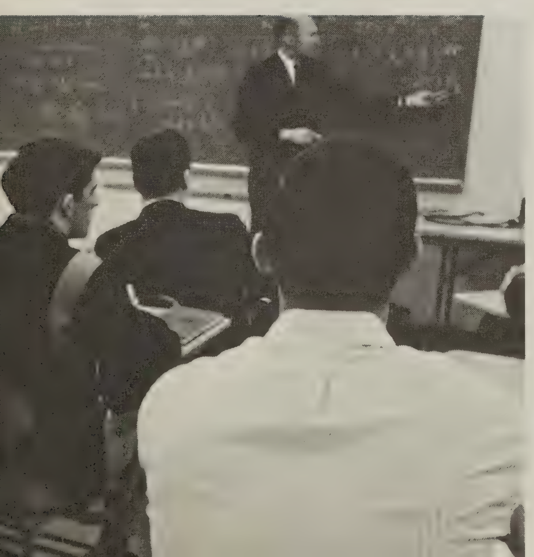
LA 233	English Literature	3	0	3
	Social Science	3	0	3
	Science	3	3	4
	Science	3	3	4
	Humanities Elective	3	0	3
PE 204	Physical Education	0	2	1
		15	8	18

Term 5

LA 234	English Literature	3	0	3
	Social Science	3	0	3
	Science	3	3	4
	Science	3	3	4
	Humanities Elective	3	0	3
PE 205	Physical Education	0	2	1
		15	8	18

Term 6

LA 235	English Literature	3	0	3
	Social Science	3	0	3
	Science	3	3	4
	Science	3	3	4
	Humanities Elective	3	0	3
PE 206	Physical Education	0	2	1
		15	8	18



MECHANICAL TECHNOLOGY

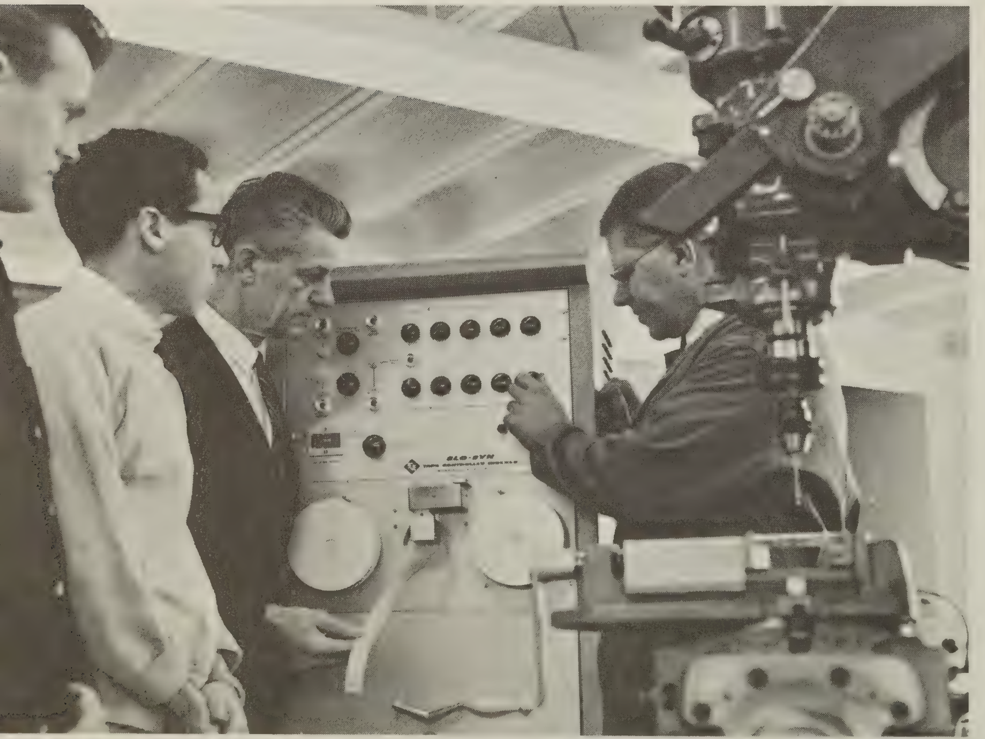
The nature of industry today makes it more important than ever that applicants for employment have a high degree of technical competence. The purpose of the Mechanical Technology curriculum is to prepare qualified young people of our community to fill the growing demand in industry and business for engineering technicians in the mechanical field.

Recent studies of our complex industrial economy show a critical need for engineering technicians. Many more are needed than can be supplied by two-year colleges, which explains why graduates of this curriculum have little difficulty finding jobs.

Initial employment opportunities are in the area between the skilled craftsman and the professional engineer, with the emphasis in the direction of the engineer.

Recent graduates have been employd in such areas as design drafting, product design, metallurgical laboratories, quality control, time study, purchasing, technical writing and process planning, to name just a few. Some of the companies that hired last year's graduates are IBM, Scintilla Division of Bendix Corp. in Sidney, Ansco, DuPont and Eastman Kodak. Many graduates accept positions far beyond the boundaries of New York State, even though the attempt is made to satisfy the needs of industry in Broome County.

This is an ECPD accredited Engineering Technology curriculum. ECPD is the Engineers Council for Professional Development.



Mechanical Technology

1st YEAR

			Hours Per Week		
Term 1			**Class**	**Lab**	**Credits**
LA	801	English	3	0	3
MA	140	College Algebra and Trigonometry	4	0	4
PH	140	Physics	3	2	4
LA	810	Psychology	3	0	3
MT	130	Manufacturing Processes	2	2	3
MT	110	Engineering Drawing	0	3	1
MT	151	Orientation	1	0	0
			16	7	18
Term 2					
LA	802	English	3	0	3
MA	141	Analytic Geometry and Calculus	3	0	3
PH	141	Physics	3	2	4
MT	131	Manufacturing Processes	1	3	2
MT	111	Eng. Drawing and Descriptive Geometry	1	3	2
MT	155	Applied Mechanics	3	0	3
			14	8	17
Term 3					
LA	803	English	3	0	3
MA	142	Analytic Geometry and Calculus	3	0	3
PH	142	Physics	3	2	4
MT	132	Manufacturing Processes	1	3	2
MT	156	Applied Mechanics	3	0	3
CH	104	Chemistry	3	2	4
			16	7	19

2nd YEAR

Term 4					
LA	830	Sociology	3	0	3
AD	120	Computer Programming	2	2	3
ET	127	Electricity	3	3	4
MT	240	Precision Measurement	1	3	2
MT	261	Fluid Mechanics	3	0	3
MT	257	Strength of Materials	3	2	4
			15	10	19
Term 5					
MT	165	Metallurgy	3	3	4
ET	128	Electricity	3	3	4
MT	220	Mechanical Design	2	3	3
MT	260	Thermodynamics I	3	3	4
MT	267	Statistical Quality Control	3	2	4
			14	14	19
Term 6					
LA	820	Economics	3	0	3
ET	129	Electronics	3	3	4
MT	135	Materials and Processes	3	3	4
MT	221	Mechanical Design	3	3	4
MT	262	Thermodynamics II	3	3	4
			15	12	19

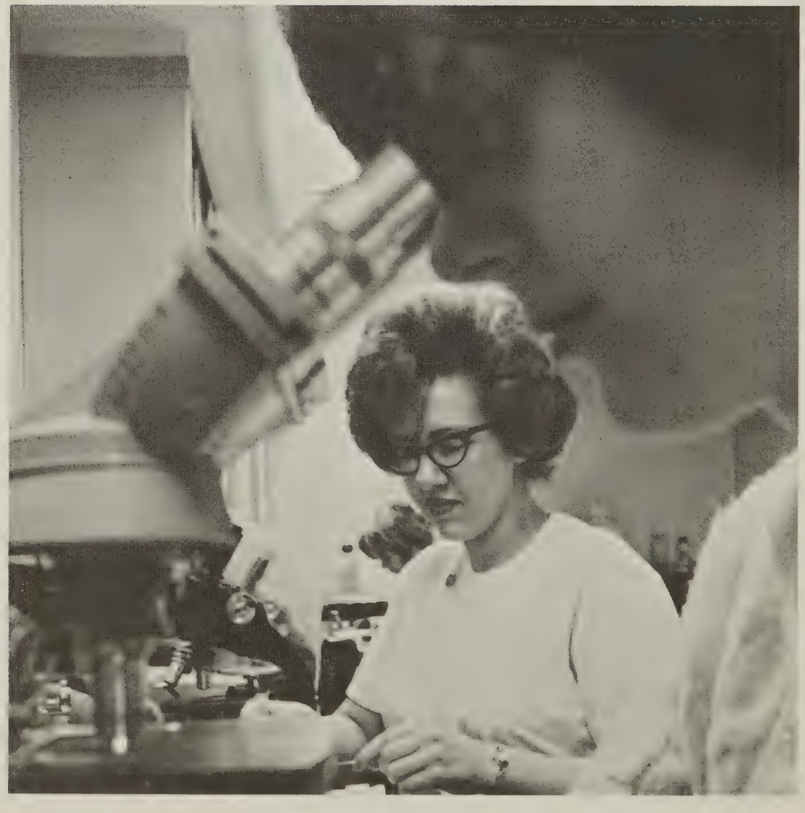
MEDICAL LABORATORY TECHNOLOGY

The demand for technical assistants in the para-medical areas is rapidly increasing with the majority finding employment in analytical, control and research laboratories of chemical and pharmaceutical companies. Others are employed as research assistants at large universities. They also work for hospitals, food processing companies and public health departments.

To provide the background necessary for work in these areas the program includes courses in chemistry, physiology, microbiology, histology, pharmacology and physics.

Extensive laboratory work in bioanalytical procedures, chemical instrumentation, microbiological and immunological techniques and radiation physics helps to develop the skill needed for a wide range of job opportunities.

Work in the sciences is balanced by a program in general education including social sciences, English and mathematics.



Medical Laboratory Technology

1st YEAR

			Hours Per Week		
Term 1			**Class**	**Lab**	**Credits**
GE	101	English	3	0	3
MA	101	*Mathematics or LA 850 Political Science	3	0	3
CH	101	Chemistry	3	3	4
MO	101	Ethics and Orientation	0	2	1
BI	131	Zoology	3	3	4
BU	161	*Typewriting or LA 805 American Literature	0-3	5-0	2-3
			12-15	13-8	17-18
Term 2					
GE	102	English	3	0	3
MA	102	Mathematics	3	0	3
CH	122	Chemistry	3	3	4
BI	132	Zoology (Anatomy)	3	3	4
PH	106	Physics	2	2	3
			14	8	17
Term 3					
GE	103	English	3	0	3
BI	133	Zoology (Physiology)	3	3	4
BI	134	Bioanalysis	0	3	1
CH	123	Chemistry	3	3	4
PH	107	Physics	2	2	3
PH	110	Physics (Radiation)	2	2	3
			13	13	18

2nd YEAR

Term 4					
GE	120	Economics	3	0	3
BI	234	Physiology	2	4	4
BI	250	Microbiology	3	4	5
CH	224	Organic Chemistry	3	3	4
BI	236	Histology	1	4	3
			12	15	19
Term 5					
GE	130	Sociology	3	0	3
BI	235	Physiology	2	4	4
BI	251	Microbiology	2	4	4
CH	225	Organic Chemistry	2	3	3
CH	226	Instrumental Analysis	2	6	4
			11	17	18
Term 6					
GE	110	Psychology	3	0	3
BI	252	Microbiology	2	4	4
BI	240	Physiology	2	6	4
CH	227	Instrumental Analysis	2	6	4
BI	285	Pharmacology	3	0	3
			12	16	18

*MA 101 Mathematics and BU 161 Typewriting will not be required if the student has had satisfactory prior training and/or experience. The alternate courses noted above will be substituted.

MEDICAL OFFICE ASSISTANT

The place of the Medical Assistant is a relatively new one in the medical field. Graduates of this curriculum have employment opportunities in physicians' offices, hospital record rooms and related fields.

Broome Tech prepares young adults for this career by offering a specialized training that combines physician's office management with medical records training and office laboratory procedures.

In addition to a basic knowledge of such skills as typing, accounting, office procedure and medical records control, the assistant must know such technical subjects as anatomy, physiology, microbiology and pharmacology. Laboratory procedures of a physician's office, such as urinalysis and hematology, complete the program.

Training experiences at cooperating hospitals include quantitative analysis of medical records, hospital statistics and reports, stenographic pool, disease and operation indexing and filing. The preparation of correspondence and medical abstracts, admitting office experience and preparation of medical reports of adjunct departments, such as X-ray, laboratory, clinical and surgical pathology, are also included.

Graduates of this program may apply for examination as an Accredited Record Technician (A.R.T.) by completing approximately one summer of directed practice at area hospitals.

There have been too few graduates in recent years to meet the demand for people in this important phase of medical service. As a result, employment opportunities have been good.

Medical Office Assistant

1st YEAR

		Hours Per Week		
Term 1		**Class**	**Lab**	**Credits**
LA 801	English	3	0	3
MA 101	*Mathematics	3	0	3
CH 101	Chemistry	3	3	4
MO 101	Ethics and Orientation	0	2	1
BI 131	Zoology	3	3	4
BU 161	*Typewriting	0-3	5-0	2-3
		12-15	13-8	17-18
Term 2				
LA 802	English	3	0	3
MA 105	Mathematics	3	0	3
CH 105	Chemistry	3	0	3
BI 132	Zoology (Anatomy)	3	3	4
MO 102	Terminology	3	0	3
BU 162	Typewriting	0	5	2
		15	8	18
Term 3				
LA 803	English	3	0	3
MO 123	Medical Records Science	3	3	4
BI 133	Zoology (Physiology)	3	3	4
BI 134	Bioanalysis	0	3	1
BU 151	Business English	3	0	3
BU 163	Typewriting	2	3	3
		14	12	18

2nd YEAR

Term 4				
LA 820	Economics	3	0	3
BI 234	Physiology	2	4	4
BI 250	Microbiology	3	4	5
MO 224	Medical Records Science	1	6	3
BU 283	Medical Office Practice	2	3	3
		11	17	18
Term 5				
LA 830	Sociology	3	0	3
MO 205	Medical Office Procedures	2	3	3
MO 225	Medical Records Science	2	6	4
BU 284	Medical Office Practice	2	3	3
BI 285	Pharmacology	3	0	3
		12	12	16
Term 6				
LA 804	Effective Speaking	3	0	3
LA 810	Psychology	3	0	3
MO 206	Medical Office Procedures	2	3	3
MO 226	Medical Records Science	1	6	3
BU 285	Medical Office Practice	2	3	3
		11	12	15

*MA 101 Mathematics and BU 161 Typewriting will not be required if the student has had satisfactory prior training and/or experience. Alternate courses will be substituted by the department.

X-RAY TECHNOLOGY

X-ray technicians are in great demand, with the majority of them finding employment in hospitals. They also work, however, for radiologists who maintain private practices, for government agencies, both civil and military, and in industry. Their work consists primarily of operating X-ray units to determine the presence of disease or injury in patients. They also assist physicians in giving X-ray and nuclear therapy treatment.

The course in X-Ray Technology at Broome Tech consists of two academic years and one interim summer of study both at the College and at cooperating hospitals. The student then serves an internship of 10 weeks. Upon satisfactory completion of this period the student receives the Associate in Applied Science Degree from the College. He or she is then eligible to take the New York State Health Department examination, which must be passed for one to be licensed to practice as an X-ray technician, and/or the Civil Service examination.

An X-ray technician needs to understand why things are done, as well as to know how to do them. Thus at Broome Tech courses are designed to give the student the proper background to understand the principles involved in his work.

Training in the radiology department of the cooperating hospitals provides the opportunity for the practical application of the college study. This training is the vital core of the program since it enables the student to observe and assist in the handling of sick and injured patients as they undergo a wide variety of radiological examinations.

The young man or woman who desires to qualify for this career must be physically capable and mentally alert. He must be fitted by training and personality to work with the sick and injured on the one hand, and with the professional medical people on the other.

X-Ray Technology

1st YEAR

			Hours Per Week		
			Class	Lab	Credits
Term 1					
LA	801	English	3	0	3
BI	130	Anatomy (Osteology)	2	4	4
MA	101	*Mathematics	3	0	3
XR	121	Radiography	3	4	4
XR	141	Hospital Radiographic Technique	0	16	4
XR	131	Seminar	0	2	1
			11	26	19
Term 2					
LA	802	English	3	0	3
BI	132	Zoology (Anatomy)	3	3	4
PH	106	Physics	2	2	3
XR	122	Radiography	3	4	4
XR	142	Hospital Radiographic Technique	0	16	4
XR	132	Seminar	0	2	1
			11	27	19
Term 3					
LA	803	English	3	0	3
PH	107	Physics	2	2	3
PH	110	Physics (Radiation)	2	2	3
XR	113	Physics (X-ray Tube)	1	0	1
XR	123	Radiography	2	4	3
XR	143	Hospital Radiographic Technique	0	16	4
XR	133	Seminar	1	0	1
			11	24	18
		SUMMER TERM			
XR	124	Radiography	2	0	2
XR	144	Hospital Radiographic Technique	Graduation Requirement		

2nd YEAR

			Class	Lab	Credits
Term 4					
LA	820	Economics	3	0	3
XR	254	Radiotherapy	2	0	2
XR	204	Anatomy (Topographic)	1	0	1
XR	224	Radiography	1	4	2
XR	244	Hospital Radiographic Technique	0	24	6
XR	234	Seminar	2	0	2
			9	18	16
Term 5					
LA	830	Sociology	3	0	3
XR	225	Radiography	2	4	3
XR	245	Hospital Radiographic Technique	0	24	6
XR	235	Seminar	2	0	2
			7	28	14
Term 6					
LA	810	Psychology	3	0	3
BU	160	*Personal Typewriting	0-3	4-0	2-3
XR	246	Hospital Radiographic Technique	0	24	6
XR	236	Seminar	2	0	2
			5-8	28-24	13-14
		SUMMER TERM			
XR	237	Seminar	2	0	2
XR	247	Hospital Radiographic Technique	Graduation Requirement		

*MA 101 Mathematics and BU 160 Typewriting will not be required if the student has had satisfactory prior training and/or experience. Alternate courses may be substituted by the department.

PRE-TECH PROGRAM

The Pre-Tech program offers a unique college opportunity to those high school graduates who are not adequately prepared for admission to college. It consists of a year of study at Broome Technical Community College, taking courses that will prepare one for entry into the regular college curriculum.

High school graduates who either do not have the proper courses or high enough grades to enter college can bolster their entry qualifications by taking this Pre-Tech program. This has been the gateway to college for many students who did not apply themselves sufficiently to their high school studies or who have "found" themselves late in their high school careers.

Many students who have worked a year or two after high school have also used this Pre-Tech program to gain admission to Broome Tech, as well as to other schools.

Students study mathematics, chemistry, physics, mechanical drawing and English during their Pre-Tech year. The teaching pace is faster than in high school, yet not as rapid as in college.

The Pre-Tech program is nine years old, and experience has shown that only about seven per cent of those who complete the Pre-Tech year and go on to college fail to get their degrees, compared with the national average of about 45% who failed to earn degrees. Thus the Pre-Tech program, which has grown from 32 students in 1957 to 138 last year, has given many an additional opportunity to prepare for college.

Pre-Tech students have all the privileges of regular full-time day students, except that they are not eligible to play on varsity athletic teams and they receive no college credits for most of their courses.

Pre-Tech Curriculum

ONE YEAR

		Hours Per Week		
Term 1		**Class**	**Lab**	**Credits**
PT 150	English	3	0	0
PT 110	Elements of Technical Mathematics	5	0	0
PT 101	Physical Science	6	0	0
PT 120	Technical Calculations	0	4	0
PT 130	Engineering Drawing	0	3	1
		14	7	1
Term 2				
PT 151	English	3	0	0
PT 111	Elements of Technical Mathematics	5	0	0
PT 102	Physical Science	6	0	0
PT 121	Technical Calculations	0	4	0
PT 131	Engineering Drawing	0	3	1
		14	7	1
Term 3				
PT 152	English	3	0	0
PT 112	Elements of Technical Mathematics	5	0	0
PT 103	Physical Science	3	0	0
PT 122	Technical Calculations	0	2	0
PT 140	Chemistry	3	2	0
PT 132	Engineering Drawing	0	3	1
		14	7	1

COURSE DESCRIPTIONS

Numbering System

All Broome Tech course numbers are preceded by two letters which in most instances stand for the department of the College responsible for teaching them. Courses numbered from 100 to 199 are generally first-year level and those from 200 to 299 second-year.

AD	Special Programs (Non-Departmental)
BI	Biological Sciences
BU	Business
CH	Chemical Technology
CT	Civil Technology
DH	Dental Hygiene
ET	Electrical Technology
LA	Liberal Arts
MA	Mathematics
MO	Medical Office Assistant
MT	Mechanical Technology
PE	Physical Education
PH	Physics
PT	Pre-Tech
XR	X-Ray Technology

SPECIAL PROGRAMS

COMPUTER CENTER

An IBM 1620 digital computer is an outstanding example of Broome Tech's modern equipment. Many colleges have built their engineering and business courses around the computer, and many industries depend on its rapid calculations. Consequently, both transfer-minded students and those preparing for immediate employment after graduation are being introduced to the world of the computer. Most students in technical programs and in the business curriculums receive instruction in using the 1620. The computer is also used for record-keeping by the College's administration.

AD 110 Introduction to Computer Programming 1 Credit

Historical development of computers, introduction to data processing systems, binary mathematics, and the IBM 1620 digital processing system. Introduction of Fortran with format, along with flow diagramming and debugging techniques. Some working experience on the 1620 computer at student's convenience.

1 Class Hour

AD 120 Fundamentals of Computer Programming 3 Credits

Historical development of computers, introduction to data processing systems, binary, octal and hexadecimal mathematics and the IBM 1620 digital processing system. Machine language instructions and Fortran with format will be studied along with block diagramming and debugging techniques. Discussion of monitor and executive systems including the concept of time sharing.

Programming drills and exercises will reinforce the basic principles by providing "hand on" training.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: MA 142 Analytic Geometry and Calculus)

BIOLOGICAL SCIENCES

BI 101 Biology 4 Credits

A detailed study of the structure and function of cells, including such ideas as the physical and chemical properties of protoplasm, cell division, animal and plant cell nutrition and cell metabolism.

3 Class Hours, 3 Laboratory Hours

BI 102 Biology 4 Credits

A study of the animal kingdom with emphasis on more complex forms and the anatomy and physiology of the various systems of man.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: BI 101 Biology)

BI 103 Biology 4 Credits

A phylogenetic and morphological survey of the plant kingdom. Also a consideration of such topics as heredity, evolution and ecology as related to both plants and animals.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: BI 102 Biology)

BI 130 Anatomy (Osteology) 4 Credits

Extensive study of the bones and joints of the human body and relation of organs to the skeleton and surface anatomy. Terminology. Must be taken concurrently with XR 121 Radiography and XR 141 Hospital Radiographic Technique.

2 Class Hours, 4 Laboratory Hours

BI 131 Zoology 4 Credits

Anatomy and physiology of animals, including chemical and physical processes such as cellular respiration, reproduction and development, energy production and transfer.

3 Class Hours, 3 Laboratory Hours

BI 132 Zoology (Anatomy) 4 Credits

Gross and functional anatomy of the human body. Intensive study of all systems illustrated by specimens and models. Detailed dissection and gross anatomical study of foetal pig. Terminology.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: BI 130 Anatomy or BI 131 Zoology or BI 101 Biology or Department permission)

BI 133 Zoology (Physiology) 4 Credits

Fundamental physiological processes and how these processes regulate the human machine. Emphasis on general principles, integration, organization and control.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: BI 132 Zoology or BI 102 Biology)

BI 134 Bioanalysis 1 Credit

Laboratory introduction to microscopic and chemical analysis of blood and urine. Must be taken concurrently with BI 133 Zoology.

3 Laboratory Hours

BI 159 Microbiology 5 Credits

General and medical microbiology. The basic phases of immunology. Asepsis, disinfection, sterilization, cultivation, identification. Test used for diagnosis and immunization.

3 Class Hours, 4 Laboratory Hours
(Prerequisite: CH 102 Chemistry)

BI 171 Anatomy and Physiology 4 Credits

Gross and microscopic anatomy of the human body and the function of its parts. Emphasis is on form and structure. Laboratory work includes microscopic anatomy, dissection of the foetal pig and cat, a study of the systems and their interrelationships. Dental hygiene students will take a two-hour laboratory.

3 Class Hours, 3 Laboratory Hours

BI 172 Anatomy and Physiology 4 Credits

Continued study of gross and microscopic anatomy, the relationship of function to structure, with emphasis on basic physiology. Chemical tests and additional dissection. Dental hygiene students will take a two-hour laboratory.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: BI 171 Anatomy and Physiology)

BI 175 Histology and Embryology 3 Credits

Lecture and laboratory study of the fundamental body tissues and different phases of embryonic development. Emphasis on the origin and structure of the tissues of the oral cavity.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BI 171 Anatomy and Physiology)

BI 234 Physiology 4 Credits

Continued study of physiological processes. Emphasis on blood and circulatory system.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BI 134 Bioanalysis)

BI 235 Physiology 4 Credits

Emphasis on the body functions of respiration, digestion, metabolism and excretion. Laboratory work includes related chemical tests and physio-chemical measurements of the body functions.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BI 234 Physiology and CH 224 Chemistry)

BI 236 Histology 3 Credits

The essential morphological and functional characteristics of tissues and organs of the animal body. Technique of animal tissue preparation, both frozen and imbedded.

1 Class Hour, 4 Laboratory Hours
(Prerequisite: BI 132 Zoology or BI 102 Biology)

BI 237 Genetics 4 Credits

Investigation of the basic laws of inheritance, integration of fundamental principles of biology, examination of implications for human welfare.

3 Class Hours, 2 Laboratory Hours
(Prerequisite: BI 102 Biology or BI 131 Zoology)

BI 239 Embryology 4 Credits

Vertebrate reproduction and development from single-celled egg to complete organ systems. Cellular, tissue and organ differentiation and organization. Based primarily on frog, chick and pig development.

2 Class Hours, 4 Laboratory Hours

BI 240 Physiology 4 Credits

Functions of the body including enzyme systems, the endocrines, electrolyte balance and acid-base regulation. Emphasizes the physiological processes involved and related assays.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BI 235 Physiology and CH 225 Chemistry)

BI 250 Microbiology 5 Credits

The biology of the common bacteria and related micro-organisms. Non-pathogens and pathogens. Basic phases of immunology. Asepsis, disinfection, sterilization, cultivation, identification.

3 Class Hours, 4 Laboratory Hours
(Prerequisite: CH 105 Chemistry or BI 103 Biology or Equivalent)

BI 251 Microbiology 4 Credits

Emphasis upon immunity and immunological procedures. Pathogenic bacteria, viruses, true fungi, rickettsiae and protozoa are studied first hand, from preserved specimens or from microscopic slides.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BI 250 Microbiology and BI 234 Physiology)

BI 252 Microbiology 4 Credits

Continued study of the principles of immunity and the practice of serological techniques. Agglutination and precipitation tests in general, inflammation and leucocyte response, blood grouping and typing.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BI 251 Microbiology)

BI 285 Pharmacology 3 Credits

The action of drugs, their sources, properties, preparation. Administration, the mathematics of pharmacy and prescription writing.

3 Class Hours
(Prerequisites: BI 133 Zoology or BI 172 Anatomy and Physiology
and BI 250 Microbiology or BI 159 Microbiology)

BI 287 Public Health 2 Credits

An over-all picture of public health (history, philosophy, structure, services) with emphasis on community dental health. Field trips to various health agencies.

2 Class Hours

BUSINESS

BU 101 Accounting 3 Credits

Fundamentals of accounting from the books of original entry to the preparation of financial statements.

2 Class Hours, 2 Laboratory Hours

BU 102 Accounting 3 Credits

Controlling accounts and special journals. Accounting for specific items such as cash, accounts receivable, fixed assets.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 101 Accounting)

BU 103 Accounting 3 Credits

Voucher system, partnerships, corporations, analysis of original statements. Use of practice set of books.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 102 Accounting)

BU 121 Finance 3 Credits

Financial principles and procedures. Detailed analyses of such factors as forms of business organization, corporate organization and problems, financial structure of business groups, financial instruments, surplus and reserves, credit and collections, reorganizations.

3 Class Hours
(Prerequisite: BU 102 Accounting)

BU 141 Business Mathematics 3 Credits

Review of arithmetic operations. Preparation and use of shortcut operations. Instruction, review and drill in percentage. Cash and trade discounts, markup, payroll, sales, property and other taxes. Simple and compound interest, bank discounts, interest, investments, annuities and algebraic applications.

3 Class Hours

BU 142 Business Statistics 3 Credits

Concepts and mechanics of basic statistical methods applicable to problems of business and economics.

3 Class Hours

BU 145 Business Law 3 Credits

Brief study of the federal and state judicial systems. Basic principles of contracts, involving the requisites for valid contracts, parties to the contracts, offer and acceptance, performance and discharge. Applications of contracts to agency. Legal aspects of partnerships and corporations, real estate law.

3 Class Hours

BU 146 Business Law 3 Credits

Contracts as applied to sales, bailments, carriers, warehousemen. Negotiable instruments, the rights and obligations associated with them.

3 Class Hours
(Prerequisite: Business Law BU 145)

BU 151 Business English 3 Credits

Development of desirable letter writing style. Review of basic letter mechanics. Inquiry and reply, claim and adjustment, credit and collection, sales and promotion, application letters. Composition of business correspondence.

3 Class Hours
(Prerequisite: LA 801 English)

BU 158 Construction Law 3 Credits

Fundamentals of business and union contracts, insurance, mechanic's liens, labor-management relations, boundary line rights and obligations, statutes and ordinances, monetary damages, injunction and mandamus, professional registration.

3 Class Hours

BU 160 Personal Typewriting 2 Credits

Development of basic techniques of typewriter operation such as keyboard mastery, stroking and correct use of control keys. Projects will include simple letters and tabulations, envelopes, stencils and master copies.

4 Laboratory Hours

BU 161 Typewriting 2 Credits

A beginning sequence in touch typewriting to make the operator accurate, rhythmical and moderately rapid in the operation of the standard makes of office typewriters. Care of the machine, operation of the various parts. Business letters, simple tabulation and the building of typewriting speed.

5 Laboratory Hours

BU 162 Typewriting 2 Credits

A continuation of BU 161 Typewriting, with emphasis on speed and accuracy.

5 Laboratory Hours
(Prerequisite: BU 161 Typewriting or equivalent)

BU 163 Typewriting 3 Credits

Continuation of basic skill building, with emphasis on speed and advanced problems. Rough drafts, technical data, specifications, manuscripts, legal papers.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 162 Typewriting or equivalent)

BU 164 Shorthand 3 Credits

A beginning course in the Gregg system, simplified. Basic principles and theory to promote the ability to read fluently from notes and plates. Dictation up to 60 words per minute.

2 Class Hours, 3 Laboratory Hours

BU 165 Shorthand 3 Credits

Emphasis on shorthand writing ability at sustained speeds. Dictation from 60 to 120 words per minute.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 161 Typewriting and BU 164 Shorthand)

BU 166 Shorthand 3 Credits

Emphasis on speed in shorthand writing. Transcription at the typewriter from shorthand notes dictated from non-previewed materials. Dictation from 80 to 140 words per minute.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 165 Shorthand)

BU 167 Transcription 3 Credits

Emphasis on punctuation and English grammar. Development of skill in reading shorthand notes and producing from them a mailable manuscript on the typewriter.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 165 Shorthand and BU 162 Typewriting)

BU 204 Intermediate Accounting 3 Credits

Assets, liability, capital and operating accounts comprising financial statements. Generally accepted accounting principles followed in the preparation of these statements. Analysis of working capital and preparation of statements of application of funds and cash flow.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 103 Accounting)

BU 205 Intermediate Accounting 3 Credits

Advanced study of partnership accounting including liquidations. Corporation accounting including preparation of consolidated statements, treasury stock, bonds and retained earnings.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 204 Intermediate Accounting)

BU 206 Intermediate Accounting 3 Credits

Installment sales, home office and branch accounting, financial statement analysis. Special ratios, measurements and analysis of operations.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 205 Intermediate Accounting)

BU 207 Cost Accounting 3 Credits

The nature and purpose of cost accounting. Accounting for direct labor, materials, and factory overhead with emphasis on job order costing.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 103 Accounting)

BU 208 Cost Accounting 3 Credits

Process cost system, standard cost principles and procedures, budgets and direct costing. Uses of cost reports and records for management decision making.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 207 Cost Accounting)

BU 209 Distribution Cost 3 Credits

Methods and procedures of applying cost accounting principles and standard cost methods to administrative, distribution and selling expenses. Measurement and control of distribution cost.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 103 Accounting)

BU 220 Payroll Accounting 3 Credits

Federal legislation and practical application of accounting for social security and tax withholding from the standpoint of the employer.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 102 Accounting)

BU 222 Federal Tax 3 Credits

Determination of taxable income and selected aspects of tax accounting. Particular attention is given to the preparation of Federal income tax returns of individuals. Preparation of partnership and corporation tax returns.

2 Class Hours, 2 Laboratory Hours

BU 223 Internal Auditing 3 Credits

Internal auditing is an independent appraisal activity within an organization for the review of accounting, financial and other operations as a basis for service to management. It is a managerial control, which functions by measuring and evaluating the effectiveness of other controls.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 103 Accounting)

BU 230 Data Processing 3 Credits

The application of unit record equipment to accounting, statistical and payroll work. Punched card systems. Familiarity with card punch, verifier and sorter.

2 Class Hours, 2 Laboratory Hours

BU 231 Data Processing 3 Credits

Programming of unit record equipment by means of wiring diagrams and control panels.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 230 Data Processing)

BU 232 Data Processing 3 Credits

Comprehensive laboratory projects to demonstrate the entire machine accounting cycle. Design and punching of tabulating cards, programming and write-up of project, tabulation of final report.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 231 Data Processing)

BU 249 Office Management 3 Credits

The science of office management including cost control, work simplification, forms control, office services, office layout.

3 Class Hours

BU 250 Office Management 3 Credits

A continuation of BU 249 Office Management.

3 Class Hours
(Prerequisite: BU 249 Office Management)

BU 253 Personnel Administration 3 Credits

Techniques and methods used to achieve utilization of manpower in business through proper selection, placement, training, job evaluation, wage setting and employee relations.

3 Class Hours

BU 254 Industrial Organization and Management 3 Credits

Introduction to the major functions or departments of industry, their interrelationships, and how they are brought together through organization. Methods, cost, production control, product development, finance, physical facilities, quality control, plant engineering, industrial relations, job evaluation, sales, advertising, budgets, records.

3 Class Hours

BU 260 Technical Shorthand 3 Credits

Emphasis on increasing technical vocabulary. Dictation and transcription of technical material taken from the fields of industry and business.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 167 Transcription or equivalent)

BU 261 Technical Shorthand 3 Credits

Dictation and transcription of technical material from the fields of scientific research and engineering. Continued emphasis on increasing technical vocabulary.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 260 Technical Shorthand or equivalent)

BU 262 Shorthand 3 Credits

Specialized training at higher speeds of dictation than are usually found in office situations. Introduction of special shortcuts to increase efficiency in taking dictation. Dictation of a variety of materials, including the Congressional Record. Dictation from 100 to 160 words per minute.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 261 Technical Shorthand or BU 271 Shorthand Dictation)

BU 270 Shorthand Dictation 3 Credits

Emphasis on increasing vocabulary. Dictation and transcription of specialized material taken from the fields of finance and law.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 167 Transcription or equivalent)

BU 271 Shorthand Dictation 3 Credits

Dictation and transcription of specialized material taken from the fields of insurance and real estate. Continued emphasis on increasing vocabulary.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 270 Shorthand Dictation)

BU 272 Office Machines 3 Credits

Training and laboratory experience in the use of office machines, using a variety of makes and types of adding, calculating, accounting, transcribing and dictating machines.

1 Class Hour, 4 Laboratory Hours
(Prerequiste: BU 161 Typewriting or equivalent)

BU 274 Office Practice 4 Credits

A business laboratory to provide simulated experiences related to the functions and positions of the business office. Emphasis on grooming, work attitudes and business ethics. Techniques of telephone procedure, duplicating, switchboard operation. Use of standard secretarial office textbook as the basis of discussion and assignments.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BU 163 Typewriting or equivalent)

BU 275 Office Practice 4 Credits

Basic training in the operation of transcribing machines, principal types of adding-calculating machines, and electric typewriters. Fundamentals of filing: alphabetic, geographic, subject, numeric. Projects for advanced study and skill development.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: BU 163 Typewriting or equivalent)

BU 280 Medical Shorthand 3 Credits

Introduction of medical vocabulary. Dictation and transcription of medical and business material. Medical prefixes and suffixes. Dictation at 60 to 70 words per minute.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 165 Shorthand or equivalent)

BU 281 Medical Shorthand 3 Credits

Emphasis on increasing medical vocabulary. Additional dictation and transcription. Use of medical dictionaries. Dictation at 70 to 80 words per minute.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 280 Medical Shorthand or equivalent)

BU 282 Medical Shorthand and Transcription 3 Credits

Transcription and dictation speeds stressed. Continued emphasis on increasing medical vocabulary. Sustained dictation at 80 words per minute.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 281 Medical Shorthand)

BU 283 Medical Office Practice 3 Credits

Basic training in the operation of various types of adding machines. Experience producing mailable transcripts from dictating machines. Theory and practice of filing business records. Telephone procedure.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: BU 163 Typewriting or equivalent)

BU 284 Medical Office Practice 2 Credits

The science of record keeping from the basic definition of terms and the fundamental accounting equation through books of original entry, final entry and the trial balance. Practical problems based on each topic.

1 Class Hour, 3 Laboratory Hours

BU 285 Medical Office Practice 3 Credits

Business management of the physician's office. Practical use of medical forms used by insurance, workmen's compensation and welfare departments.

2 Class Hours, 3 Laboratory Hours
(Prerequisites: BU 283 and BU 284 Office Practice)

BU 290 Salesmanship 3 Credits

The principles of sales with practical applications. Prospecting, product and service analysis, meeting objections, demonstrating, sales psychology, preparation of sales presentations.

3 Class Hours

BU .291 Sales Management 3 Credits

Development of techniques of control in the administration of sales forces. Incentive systems, territory planning, development of sales potentials and personnel problems peculiar to this field.

3 Class Hours
(Prerequisites: BU 142 Business Statistics and BU 290 Salesmanship)

BU 292 Marketing 3 Credits

The distributive phase of economics, from the time goods or services are produced up to the point of consumption. Marketing functions, classification of goods and of markets, marketing channels and agents in each. Relationship to advertising and sales promotion, salesmanship, regulations and laws affecting marketing. Lectures, discussions, case problems.

3 Class Hours

BU 293 Advertising 3 Credits

Development, economics and functions of advertising. Cost and application, the various media, advertising as a vocation, testing and research utilization. Lectures, demonstrations, field trips.

3 Class Hours
(Prerequisites: BU 291 Sales Management and BU 292 Marketing)

BU 294 Advertising 3 Credits

Detailed development of advertisements, copy and layout, method and problems of reproduction. Planning the advertising campaign with step-by-step development.

3 Class Hours
(Prerequisite: BU 293 Advertising)

BU 295 Market Research 3 Credits

Methods of collecting and interpreting marketing information. Specific applications to problems in market development, market potential and sales management.

3 Class Hours
(Prerequisites: BU 292 Marketing and BU 142 Business Statistics)

BU 296 Credit 3 Credits

Types of credit, credit department organization, credit reports and information, credit risk factors, collection procedures and analysis of financial statements.

3 Class Hours
(Prerequisite: BU 102 Acounting)

CHEMISTRY

CH 101 Chemistry 4 Credits

Fundamental concepts of inorganic chemistry including composition of substances, kinetic and molecular theories, atomic structure and bonding, solutions and colloids, ions in solution and nucleonics.

3 Class Hours, 3 Laboratory Hours

CH 102 Chemistry 4 Credits

Fundamental concepts of organic chemistry, including carbohydrates, lipids and proteins and their role in metabolism.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 101 Chemistry or CH 110 Chemistry)

CH 104 Chemistry 4 Credits

Basic laws, principles and theories of chemistry. Structure of matter, periodicity, chemical action, states of matter and solutions, elements of organic chemistry.

3 Class Hours, 2 Laboratory Hours

CH 105 Chemistry — 3 Credits

Fundamental concepts of organic chemistry, including carbohydrates, lipids and proteins and their role in metabolism.

3 Class Hours
(Prerequisite: CH 101 Chemistry)

CH 110 Chemistry — 4 Credits

Fundamental principles and laws underlying chemical action, their integration with the theories of atomic structure and chemical bonding, and correlation with the position of the elements on the periodic chart. Topics discussed are atomic structure, the periodic chart, chemical bonding, water and the states of matter.

3 Class Hours, 3 Laboratory Hours

CH 111 Chemistry — 4 Credits

Continuation of CH 110 Chemistry, including solutions, oxidation-reduction, ionization and electrolysis, acids, bases and salts, chemical equilibrium and coordination compounds.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 110 Chemistry)

CH 112 Chemistry — 4 Credits

A theoretical discussion of ionization constants, solubility products and equilibrium constants as influencing qualitative analysis. Laboratory work includes the detection and identification of the more important cations and anions including work on the analysis of mixtures.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 111 Chemistry)

CH 113 Chemistry — 3 Credits

An introductory course to prepare the student for the mathematical operations encountered in more advanced chemistry courses.

3 Class Hours
(Prerequisite: CH 111 Chemistry)

CH 122 Chemistry — 4 Credits

Continuation of CH 101 Chemistry involving specific applications of the concepts studied in that course.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: CH 101 Chemistry and MA 101 Mathematics or equivalent)

CH 123 Chemistry — 4 Credits

Continuation of CH 122 Chemistry and includes theory and laboratory in volumetric and gravimetric analysis.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: CH 122 Chemistry and MA 102 Mathematics)

CH 131 Chemistry — 5 Credits

Ionization constants, solubility products and equilibrium constants as they influence qualitative analysis. Laboratory work includes the detection and identification of the more important cations and anions, including work on the analysis of mixtures. Emphasis on various tests—flame coloration, blowpipe, bead, open and closed tube, solubility and confirmation. Use of hand spectroscope and light microscope.

3 Class Hours, 4 Laboratory Hours
(Prerequisite: CH 111 Chemistry)

CH 180 Chemistry 4 Credits

For non-technical students, explaining basic laws, principles and theories. Topics include structure of matter, chemical behavior, states of matter, solutions and elements of organic chemistry. The laboratory experiments are illustrated by instructor demonstration rather than practice by the student.

3 Class Hours, 2 Laboratory Hours

CH 224 Organic Chemistry 4 Credits

An integrated general presentation of theory, nomenclature, preparation, properties, reactions, occurrence and uses of important aliphatic and aromatic organic compounds.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 123 Chemistry)

CH 225 Organic Chemistry 3 Credits

Continuation of CH 224 Organic Chemistry and includes such topics as proteins, lipids and carbohydrates, alkaloids, steroids, vitamins and enzymes.

2 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 224 Organic Chemistry)

CH 226 Instrumental Analysis 4 Credits

Theory and laboratory instruction in electrochemical methods of analysis including potentiometry, polarography, coulometry, conductimetry and radiochemistry.

2 Class Hours, 6 Laboratory Hours
(Prerequisites: CH 123 Chemistry and CH 224 Organic Chemistry)

CH 227 Instrumental Analysis 4 Credits

Theory and laboratory instruction in chromatography (gas, thin layer and column), spectrophotometry (emission and absorption).

2 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 226 Instrumental Analysis)

CH 241 Quantitative Chemistry 7 Credits

Application of physical and chemical theory to the more important gravimetric and volumetric procedures. Analytical balance, errors, precision, significant figures and preparation of samples for analysis. Laboratory work in the application of various methods of quantitative analysis including gravimetry, neutralimetry, precipitimetry, redoximetry and compleximetry.

4 Class Hours, 9 Laboratory Hours
(Prerequisites: CH 131 Chemistry and CH 113 Chemistry)

CH 242 Quantitative Chemistry 5 Credits

Instrumental methods of analytical chemistry, primarily electrochemical methods. Laboratory experiments in potentiometry, polarography, coulometry, conductimetry, and radiochemistry and electrogravimetry. Related technical report writing.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 241 Quantitative Chemistry)

CH 243 Instrumental Methods of Analysis 5 Credits

Instrumental methods of analytical chemistry, primarily optical methods. Laboratory work in visible, ultraviolet and infrared spectrophotometry, chromatography—column, paper thin layer and gas. Chemical microscopy and emission spectroscopy.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 242 Quantitative Chemistry)

CH 251 Organic Chemistry 5 Credits

The important classes of carbon compounds, such as alcohols, alkyl and aryl halides, ethers and carboxylic acids in terms of modern structural theory. Properties are linked to structure by a study of reaction rates, equilibrium, transition state and activation energy, reaction mechanisms, resonance and orbital theories.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 131 Chemistry or CH 112 Chemistry)

CH 252 Organic Chemistry 5 Credits

A continuation of the study of additional classes of organic compounds followed by a study of tautomerism, stereochemistry, carbohydrates, proteins and dyes in terms of modern structural theory. Properties are linked to structure by a study of reaction rates, equilibrium, transition state and activation energy, reaction mechanisms, resonance and orbital theories.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 251 Organic Chemistry)

CH 253 Organic Chemistry 5 Credits

The identification of organic compounds by correlation of fundamental properties, and the behavior of organic compounds with their structures. Preparation and properties of polymers.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 252 Organic Chemistry)

CH 261 Chemical Engineering Stoichiometry 3 Credits

A first course in chemical engineering designed to give the student background in the application of chemistry, physics and mathematics to the solution of engineering problems. Special emphasis is placed on the solution of problems dealing with material and energy balances.

3 Class Hours
(Prerequisites: CH 113 Chemistry and MA 140 College Algebra and Trigonometry)

CH 262 Chemical Engineering Unit Operations 4 Credits

The lecture portion involves a theoretical treatment of the basic unit operations of chemical engineering, including fluid flow, heat transfer, evaporation. Laboratory experimentation is conducted in the above areas using pilot plant size equipment, and formal reports utilizing the students' data are required.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 261 Chemical Engineering Stoichiometry)

CH 263 Chemical Engineering Unit Operations 5 Credits

The lecture portion involves a theoretical treatment of the basic unit operations of chemical engineering, including evaporation, distillation, drying, gas absorption and filtration. Laboratory experimentation is conducted in the above areas using pilot plant size equipment, and formal reports utilizing the students' data are required.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: CH 262 Chemical Engineering Unit Operations)

CH 265 Chemical Engineering Stoichiometry 3 Credits

A continuation of CH 261 Chemical Engineering Stoichiometry, covering the solution of more advanced material and energy problems.

3 Class Hours
(Prerequisite: CH 261 Chemical Engineering Stoichiometry)

CH 266 Survey of Transfer Operations 4 Credits

The basic mechanisms of heat, mass and momentum transfer, as applied to chemical engineering. Laboratory work involves demonstration and measurement of the above phenomena.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CH 265 Chemical Engineering Stoichiometry)

CIVIL TECHNOLOGY

CT 110 Architectural Drawing 1 Credit

Introduction to residential architecture including preliminary studies, materials and methods of construction, space analysis and plan development.

3 Laboratory Hours
(Prerequisite: MT 110 Engineering Drawing)

CT 119 Plain Concrete 3 Credits

A study of cements, aggregates, and plain concrete, including the testing of cements and aggregates, the design, mixing, testing, placing, curing control and inspection of plain concrete. ASTM and AASHO standards.

2 Class Hours, 3 Laboratory Hours

CT 131 Heating, Ventilating and Air Conditioning 3 Credits

Fundamentals of heating, ventilating and air conditioning. These include the theory, design, layout and installation of steam, hot water, warm air heating systems and air conditioning systems.

3 Class Hours
(Prerequisites: PH 141 Physics and MT 155 Applied Mechanics)

CT 140 Surveying 5 Credits

Plane surveying including distance measurement, note keeping, compass surveying, leveling, angle measurement, care and use of instruments, stadia, plane table topography, traversing, coordinates, area computation, mapping.

3 Class Hours, 6 Laboratory Hours
(Prerequisite: MA 140 College Algebra and Trigonometry)

CT 141 Surveying 4 Credits

Continuation of CT 140 Surveying, including observation of meridian, triangulation, land surveys, horizontal and vertical control, hydrographic surveying, photogrammetry.

2 Class Hours, 6 Laboratory Hours
(Prerequisite: CT 140 Surveying)

CT 153 Strength of Materials 4 Credits

Study of stress and strain, elasticity, torsion, welded joints, riveted joints, beam stresses, centroids, moments of inertia, shear and moment diagrams. Laboratory work includes strain gauges, tests on wood and metals conducted in accordance with ASTM and AASHO standards.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: MT 155 Applied Mechanics and
MA 141 Analytic Geometry and Calculus)

CT 211 Architectural Drawing 1 Credit

Development of working drawings for use in residential type construction, including plot plans, floor plans, elevations, details, mechanical and electrical layouts.

3 Laboratory Hours
(Prerequisite: CT 110 Architectural Drawing)

CT 212 Architectural Drawing 1 Credit

Sketching, perspective drawing, and an introduction to the planning of commercial-industrial type buildings.

3 Laboratory Hours
(Prerequisite: CT 211 Architectural Drawing)

CT 220 Reinforced Concrete Design 4 Credits

Fundamental behavior of reinforced concrete, both elastic and inelastic, is treated. Design, analysis, and detailing of rectangular beams, T-beams, beams reinforced for compression, column and footings. Major emphasis is on ultimate strength design methods. An integrated design and detailing project is included.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CT 254 Strength of Materials)

CT 221 Structural Steel Design 4 Credits

Fundamental theory and principles necessary for design of simple steel structures. Design, investigation and detailing of beams, columns, tension and compression members and their connections, composite beams. An integrated design and detailing project is included.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CT 220 Reinforced Concrete Design)

CT 230 Building Design 4 Credits

Application of architectural design principles to commercial-industrial type buildings. A term project is included.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CT 212 Architectural Drawing)

CT 250 Estimating and Construction Planning 4 Credits

A systematic approach to determining the cost of a building project combined with the planning and scheduling of operations. An introduction to critical path method.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CT 212 Architectural Drawing)

CT 254 Strength of Materials 3 Credits

A continuation of CT 153 Strength of Materials including the design of beams and columns; bending, shearing and combined stresses; deflection of determinate and indeterminate members, energy method and selected topics.

3 Class Hours
(Prerequisite: CT 153 Strength of Materials)

CT 270 Soil Mechanics 4 Credits

Origin and nature of soil, soil density, sampling, soil water, flow nets and seepage forces. Classification, frost action, stabilization, stress, consolidation, settlement, shearing strength, stability, embankments, dams, retaining walls, piles and underground conduits. The laboratory covers ASTM and AASHO specifications used in classifying and predicting behavior of soils.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CT 153 Strength of Materials)

CT 283 Route Surveying and Highway Design 4 Credits

Horizontal and vertical curves, spirals, sight distances, earthwork and computer applications. Term project includes plan, profile, intersections, cross sections, areas, volumes, superelevation, mass diagram, estimate drainage. Computer is used for problem-solving.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: CT 141 Surveying)

DENTAL HYGIENE

DH 100 Dental Hygiene and Ethics 2 Credits

History of dental hygiene. Ethical practice and proper oral hygiene technique.

2 Class Hours

DH 101 Dental Manikin Practice 3 Credits

Removal of simulated deposits and accretions on the teeth of manikins by use of dental instruments. Proper scaling and polishing techniques, toothbrushing and general mouth cleanliness are stressed.

1 Class Hour, 4 Laboratory Hours
(Prerequisites: DH 140 Dental Anatomy and DH 100 Dental Hygiene and Ethics and BI 171 Anatomy and Physiology)

DH 102 Dental Manikin Practice 3 Credits

A continuation of DH 101.

1 Class Hour, 4 Laboratory Hours
(Prerequisites: DH 101 Dental Manikin Practice and DH 141 Dental Anatomy and BI 171 Anatomy and Physiology)

DH 121 Hygiene 2 Credits

The various factors (physical, social, psychological) which affect the total health status of the individual, and the effective application of sound health principles in solving health problems.

2 Class Hours

DH 140 Dental Anatomy 3 Credits

Lecture and laboratory study of the gross anatomy of the maxilla, mandible, individual teeth. The significance of the foregoing to dental physiology and the rendering of a dental prophylaxis.

2 Class Hours, 2 Laboratory Hours

DH 141 Dental Anatomy 3 Credits

Continuation of DH 140.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: DH 140 Dental Anatomy)

DH 153 Radiology 3 Credits

Proper use of the X-ray machine and accessories, exposure, development and mounting of dental films, procedures to safeguard the patient and operator from hazards of radiation, and the understanding of the facets of the use of X-ray in clinical practice of dentistry.

3 Class Hours
(Prerequisites: DH 101 Dental Manikin Practice and DH 141 Dental Anatomy and BI 172 Anatomy and Physiology)

DH 158 Dental Office Practice 3 Credits

General dental office procedures, psychology of patient relations, dental assisting and operating room procedure, and the importance to the dental hygienist of being a member of the dental health team.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: BU 161 Typewriting or equivalent)

DH 204 Clinical Dental Hygiene 4 Credits

Dental prophylaxes performed on patients, mouth inspection, topical application of fluorides, home care instruction to the patient. Practice in dental assisting, sterilizing techniques. Taking, processing and mounting radiographs. Classroom instruction in dental health education to elementary and secondary school students.

12 Laboratory Hours
(Prerequisites: All Dental Hygiene and Biology Courses in Terms 1, 2 & 3)

DH 205 Clinical Dental Hygiene 4 Credits

A continuation of DH 204 Clinical Dental Hygiene.

12 Laboratory Hours
(Prerequisite: DH 204 Clinical Dental Hygiene)

DH 206 Clinical Dental Hygiene 4 Credits

A continuation of DH 205 Clinical Dental Hygiene.

12 Laboratory Hours
(Prerequisite: DH 205 Clinical Dental Hygiene)

DH 244 Preventive Dentistry 3 Credits

Preventive methods of maintaining the health of the mouth and control of dental caries. Detailed studies of the latest methods of caries control through laboratory tests, diet and fluoridation. Study of teeth not in normal occlusion, classification and probable factors causing orthodontic conditions. Introduction to abnormal oral conditions found in children, with possible methods of treatment or correction.

3 Class Hours
(Prerequisites: BI 175 Histology & Embryology and DH 141 Dental Anatomy and BI 159 Microbiology)

DH 254 General Pathology 2 Credits

A broad picture of the disease process through a study of common general diseases, their causes, results, treatment. Emphasis on the principles of inflammation, healing and repair.

2 Class Hours
(Prerequisites: BI 159 Microbiology and BI 175 Histology & Embryology and BI 172 Gross Anatomy & Physiology)

DH 255 Oral Pathology 2 Credits

Oral diseases, their causes, recognition and treatment, with particular emphasis on the application of the principles covered in DH 254 General Pathology.

2 Class Hours
(Prerequisite: DH 254 General Pathology)

DH 260 Dental Laboratory Practice 3 Credits

An introduction to the restorative phase of dentistry. Dental laboratory procedures by lectures, demonstrations and actual processing of laboratory projects by students. History, property and use of various dental laboratory materials.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: DH 141 Dental Anatomy)

DH 261 Nutrition 3 Credits

Basic nutrition, essential nutrients, requirements and recommended allowances. The role of dietary intake in an individual's dental health.

3 Class Hours
(Prerequisites: CH 102 Chemistry and BI 172 Anatomy and Physiology and BI 175 Histology and Embryology)

DH 264 School Organization 3 Credits

The elementary and secondary school program in terms of organization, administration, finance, personnel, school laws and regulations, teacher organization and their interrelationships and implications.

3 Class Hours

DH 267 Anesthesia 2 Credits

Principles of general and local anesthetics and patient management.

2 Class Hours
(Prerequisites: All preceding DH and BI courses in Terms 1, 2, 3 and 4)

DH 268 Special Dental Practice 3 Credits

Various specialty practices in dentistry: periodontia, prosthetics, orthodontics, endodontics, exodontics, oral surgery and maxio-facial surgery. Nature, procedure, differences in types of practices and the role of the dental hygienist in each practice.

3 Class Hours
(Prerequisites: All preceding DH and BI courses in Terms 1, 2, 3, 4 and 5)

DH 283 Dental Health Education 3 Credits

The role of dental health in society. Review of preventive dentistry measures and their use in individual and group instruction. Study and preparation of instructional aids and source materials for dental health education.

2 Class Hours, 2 Laboratory Hours
(Prerequisites: All preceding DH and BI courses in Terms 1, 2 and 3)

DH 285 Health Services in Schools 3 Credits

The place and function of health services in public education. Laws and regulations which apply to health services in schools. Factors which influence the health status of the child in the school environment. The coordination of school and community health services.

3 Class Hours
(Prerequisite: DH 283 Dental Health Education)

ELECTRICAL TECHNOLOGY

ET 101 Manufacturing Processes 2 Credits

Manufacturing processes related to the electrical industry to provide a basic knowledge in bench operations and tool operations involving the use of the lathe, drill press, vertical end mill, band saw, engraving machine and power hacksaw. Practice and study of oxyacetylene and arc welding.

1 Class Hour, 3 Laboratory Hours

ET 102 Electrical Construction and Maintenance 2 Credits

General trade practices to promote acquisition of basic manipulative skills. Installation and maintenance of electrical equipment. Different types of wiring systems used in industry and homes; trouble-shooting and repair of electrical equipment. Study and practice of fabrication methods used in the electrical industry, National Electrical Code rules and shop safety practices.

1 Class Hour, 3 Laboratory Hours
(Prerequisite: ET 101 Manufacturing Processes or equivalent)

ET 103 Electrical Construction and Maintenance 1 Credit

Continuation of ET 102 Electrical Construction and Maintenance.

3 Laboratory Hours

ET 104 Industrial Safety and First Aid 2 Credits

Accident sources and causes, safety as a responsibility of workers and management, job safety analysis. Education, training, supervision and organization for safety. Accident reports and records. Principles of first aid.

2 Class Hours

ET 110 Physics (Fundamentals for Electricity) 5 Credits

Dimensional, vector and graphical analysis of basic physical concepts, establishing a foundation for the study of electrical principles.

4 Class Hours, 3 Laboratory Hours

ET 111 Physics (Electricity and Magnetism) 5 Credits

Parameters and components of electrical circuits founded upon electric and magnetic field concepts.

4 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 110 Physics)

ET 112 Semiconductor Fundamentals 4 Credits

Investigation of electrical phenomena within solids, based upon extra-nuclear atomic structure and concepts of solid state physics.

4 Class Hours
(Prerequisite: ET 110 Physics)

ET 120 Electrical Circuits 5 Credits

Application of circuit parameters to single and polyphase circuits, involving the use of vector algebra and elementary circuit laws.

4 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 111 Physics)

ET 127 Electricity 4 Credits

The beginning of a two-term sequential course of applied electrical concepts emphasizing DC and AC circuitry and an introduction to electrical machinery.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: PH 142 Physics)

ET 128 Electricity 4 Credits

A continuation of ET 127 Electricity.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 127 Electricity)

ET 129 Electronics 4 Credits

An applied electronics course with related laboratory experiments. An introduction to the theory and operation of electronic components, with emphasis on their applications.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 128 Electricity)

ET 130 Engineering Drawing 1 Credit

Techniques of geometric construction, principles of orthographic projection, sections, theory and application of dimensioning and tolerancing. Lettering practice and development of technical sketching.

3 Laboratory Hours

ET 131 Engineering Drawing 1 Credit

Discussions of shop processes and procedures to facilitate the understanding of drafting problems. Types and representation of threads, bolts, nuts, keys, keyways and locking devices. Preparation of assembly drawings. Applications of auxiliary views and of axonometric projection. Methods of reproducing drawings.

3 Laboratory Hours
(Prerequisite: ET 130 Engineering Drawing)

ET 132 Engineering Drawing 1 Credit

Solutions of mathematical problems using graphical methods. Development of scale layout and construction of various common forms of nomographs. Geometric derivations of various types of mathematical relationships.

3 Laboratory Hours
(Prerequisite: ET 131 Engineering Drawing)

ET 135 Electricity 3 Credits

The beginning of a two-term sequential course of applied electrical concepts emphasizing DC and AC circuitry and containing an introduction to the DC electrical machinery. Related laboratory experiments are included which emphasize concepts as applied in the building construction industry.

3 Class Hours, 2 Laboratory Hours
(Prerequisite: MA 140 College Algebra and Trigonometry)

ET 136 Electricity 3 Credits

A continuation of ET 135 Electricity with laboratory emphasis on applications of AC electrical concepts.

3 Class Hours, 2 Laboratory Hours
(Prerequisite: ET 135 Electricity)

ET 223 Network Analysis 4 Credits

Analysis of complex electrical networks by the application of Kirchhoff's Laws, Thevenin's theorem, Norton's theorem, superposition and vector loci methods.

4 Class Hours
(Prerequisite: ET 120 Electrical Circuits)

ET 230 Electrical Design 1 Credit

Application of electrical drafting principles to the planning of power layout and lighting design. Manufacturers' catalogs, charts, and the National Electrical Code form essential reference material. Lists of materials and schedules are prepared as parts of each project.

3 Laboratory Hours
(Prerequisite: ET 132 Engineering Drawing)

ET 231 Electrical Design — 1 Credit

Electrical drafting in the field of electronics. A study of symbols, conventions, layout procedures and circuit sequence that comprises an electronic circuit. Individual student projects.

3 Laboratory Hours
(Prerequisite: ET 230 Electrical Design)

ET 232 Electrical Design — 1 Credit

Circuit symbols and types of diagrams used in control mechanisms. Discussions of the principles of control devices, their construction and operation. Individual student projects.

3 Laboratory Hours
(Prerequisite: ET 231 Electrical Design)

ET 240 Electrical Machines — 5 Credits

Theory, operation and application of DC machinery. Introduction to single and polyphase transformers, their design, characteristics and applications. Use of vector diagrams. Class work related to laboratory experience.

4 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 120 Electrical Circuits)

ET 241 Electrical Machines — 5 Credits

Continuation of the work on transformers with attention to special connectors. Alternators, synchronous motors, induction motors. Theory of design, construction, characteristics and applications. Laboratory work dealing with several methods of evaluation. Special methods of predicting characteristics, including vector and circle diagram methods.

4 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 240 Electrical Machines)

ET 242 Automatic Controls — 5 Credits

Theory, operation and application of industrial equipment used in the automatic control of industrial motors and generators. Examination, operation and trouble-shooting of these control devices. Introduction to the principles of servomechanisms.

4 Class Hours, 3 Laboratory Hours
(Prerequisites: ET 241 Electrical Machines and ET 253 Electronics)

ET 250 Electronics — 5 Credits

Introduction to electronic building blocks. Characteristics of vacuum, gas and semiconductor devices. Multi-element and special types of active devices.

4 Class Hours, 3 Laboratory Hours
(Prerequisites: MA 141 Analytic Geometry and Calculus
and ET 112 Semiconductor Fundamentals)

ET 251 Electronics — 5 Credits

Use of electronic building blocks. Vacuum, gas and semiconductor devices in functioning circuitry. Prediction and analysis of performance.

4 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 250 Electronics)

ET 252 Electronics — 5 Credits

Behavior of large signal devices, graphical analysis, application of feedback, sinusoidal oscillators.

4 Class Hours, 3 Laboratory Hours
(Prerequisites: MA 142 Analytic Geometry and Calculus
and ET 251 Electronics)

ET 253 Electronics 5 Credits

Cascaded circuits. Behavior and applications of non-linear circuits, circuits with heavy feedback, wave shaping, non-sinusoidal oscillators, counters, functional devices.

4 Class Hours, 3 Laboratory Hours
(Prerequisite: ET 252 Electronics)

ET 261 Industrial Organization 3 Credits

Principles, functions and coordination of industrial organization. Management, costs, product development, marketing, methods analysis, work measurement, plant layout, material handling, production and inventory control.

3 Class Hours

ET 262 Industrial Relations 3 Credits

Analysis and study of the principles, concepts and techniques of industrial relations. Emphasis on the personnel function as an important area of industrial relations. Guidance and counsel to students in finding and selecting suitable employment as well as long-range vocational goals in Electrical Technology.

3 Class Hours

ET 263 Engineering Economics 3 Credits

A fundamental course in engineering economics for Electrical Technology students. Fundamental aspects of component selection and purchase, equipment maintenance and comparison of various plant operations. Engineering depreciation calculation, minimum cost analysis, estimates in economy analysis and classifications of engineering cost.

3 Class Hours

LIBERAL ARTS

LA 101, 102, 103 Beginning Spanish 3 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio- lingual laboratory. Reading of graded literary texts.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 101 Spanish for LA 102
LA 102 Spanish for LA 103)

LA 110, 111, 112 Beginning French 3 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading of graded literary texts.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 110 French for LA 111
LA 111 French for LA 112)

LA 119, 120, 121 Beginning German 3 Credits

Basic principles of grammar and syntax. Emphasis on oral practice in classroom, supplemented by work in audio-lingual laboratory. Reading of graded literary texts.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 119 German for LA 120
LA 120 German for LA 121)

LA 130 English Composition 3 Credits

Introduction to the nature and history of language. Instruction and practice in the writing of short, expository compositions. The tools and techniques of the research paper.

3 Class Hours

LA 131 English Composition 3 Credits

Continued expository theme writing. Instruction and practice in argumentation, description and narration. Study of tone and other aspects of style through analysis of selected essays.

3 Class Hours
(Prerequisite: LA 130 English Composition)

LA 132 English Composition 3 Credits

Critical and evaluative writing based on ideas suggested by the study of selected pieces of literature.

3 Class Hours
(Prerequisite: LA 131 English Composition)

LA 145 Development of Western Civilization 3 Credits

The development of man from the dawn of history, through the classical civilizations of Greece and Rome, to the Middle Ages and the Renaissance.

3 Class Hours

LA 146 Development of Western Civilization 3 Credits

The Reformation, the emergence of modern Europe, humanism, exploration and invention, the Age of Enlightenment, colonialism and the Age of Revolutions.

3 Class Hours

LA 147 Development of Western Civilization 3 Credits

The period from the close of the Napoleonic Period to the present: development of nationalism, the beginning of liberalism, the growth of industrialism, the two World Wars and present-day tensions. Social and cultural trends of the period.

3 Class Hours

LA 155 Economics 3 Credits

Introduction to the principles and problems of micro-economics. Structure of the American economy, national income determination, money and banking system. Economic growth, business fluctuations, monetary, fiscal and stabilization policies.

3 Class Hours

LA 156 Economics 3 Credits

Introduction to the principles and problems of micro-economics. Theory of prices and allocation of resources. Theory of the firm from competition to monopoly and connecting government policy. Introduction to income distribution, wage theory, labor unionism and collective bargaining, government and labor.

3 Class Hours

LA 157 Economics 3 Credits

Continuation of distribution theory, rent, profits, wage-price policy and the role of government, public finance. Principles and problems of international monetary and fiscal policies. Current economic problems, the underdeveloped countries, comparative economic systems.

3 Class Hours

LA 186 Psychology 3 Credits

Description and growth of psychology as a science, with special reference to theories, systems and methodology. Structure and functions of the brain and neural system, nature and measurement of individual differences, intelligence and its appraisal.

3 Class Hours

LA 187 Psychology 3 Credits

The bases and functions of sensation, perception, learning, thinking, communication and language. The growth and development of the child from conception to adolescence studied in relation to these entities.

3 Class Hours
(Prerequisite: LA 186 Psychology)

LA 188 Psychology 3 Credits

The process of motivation, origins and modifications of feeling and emotion, conflict and adjustment, normal and abnormal personality, social behavior, psychology of working situations.

3 Class Hours
(Prerequisite: LA 187 Psychology)

LA 193 Philosophy 3 Credits

Methodology, the principles of deductive and inductive logic, and epistemology.

3 Class Hours

LA 194 Philosophy 3 Credits

The various systems of thought, including idealism, rationalism, theism, empiricism, positivism, pragmatism, scepticism and existentialism.

3 Class Hours

LA 195 Philosophy 3 Credits

Ethics: moral values, rules of conduct and guides to action. Aesthetics: the science of beauty, the rules and principles of art.

3 Class Hours

LA 204 Intermediate Spanish 3 Credits

Reading and discussion of cultural and historical texts. Continuation of grammar, syntax and oral practice in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 103 Beginning Spanish)

LA 205 Intermediate Spanish 3 Credits

Intensive and extensive reading of literary works of recognized authors. Continuation of grammar, syntax and oral practices in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 204 Intermediate Spanish)

LA 206 Intermediate Spanish 3 Credits

Emphasis on composition, with continuation of grammar, syntax and oral practices in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 205 Intermediate Spanish)

LA 207 Spanish Conversation and Composition 3 Credits

Intensive drill in today's spoken Spanish. Practice in writing in the language. Use of audio-lingual laboratory to supplement classroom work.

3 Class Hours, 1 Laboratary Hour
(Prerequisite: LA 206 Intermediate Spanish)

LA 208 Introduction to Spanish Literature 3 Credits

Lectures, readings and discussions of masterpieces of Spanish literature from *Poema de mio Cid* to the 18th century. Voluntary use of audio-lingual laboratory to hear recordings of Spanish masterpieces.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 207 Spanish Conversation and Composition)

LA 209 Introduction to Spanish Literature 3 Credits

Further lectures, readings and discussions of representative Spanish works of the 18th, 19th and 20th centuries. Voluntary use of audio-lingual laboratory to hear recordings of Spanish masterpieces.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 208 Introduction to Spanish Literature)

LA 213 Intermediate French 3 Credits

Reading and discussion of cultural and historical texts. Continuation of grammar, syntax and oral practice in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 112 Beginning French)

LA 214 Intermediate French 3 Credits

Intensive and extensive reading of literary works of recognized authors. Continuation of grammar, syntax and oral practices in classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 213 Intermediate French)

LA 215 Intermediate French 3 Credits

Emphasis on composition, with continuation of grammar, syntax and oral practices in the classroom and audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 214 Intermediate French)

LA 216 French Conversation and Composition 3 Credits

Practice in oral and written French. Special attention to French phonetics and modern French idiom. Use of audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 215 Intermediate French)

LA 217 Introduction to French Literature 3 Credits

Reading, lectures and reports on masterpieces of French literature with cultural and historical implications, from *La Chanson de Roland* through the eighteenth century. Use of audio-lingual laboratory to hear recordings of masterpieces.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 216 French Conversation and Composition)

LA 218 Introduction to French Literature 3 Credits

Further reading, lectures, reports on masterpieces of French literature with their implications, from the eighteenth century to modern times. Use of audio-lingual laboratory to hear recordings of masterpieces.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 217 Introduction to French Literature)

LA 222 Intermediate German 3 Credits

Emphasis on grammar with difficult problems of syntax and translation. Conversation with audio-lingual laboratory work.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 121 Beginning German)

LA 223 Intermediate German 3 Credits

Further drill in grammar and composition. Conversation with audio-lingual laboratory work. Introduction to original texts of standard authors.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 222 Intermediate German)

LA 224 Intermediate German 3 Credits

Reading and discussion of original texts of standard authors with cultural and historical implications. Use of audio-lingual laboratory to hear recordings of masterpieces.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 223 Intermediate German)

LA 225 German Conversation and Composition 3 Credits

Practice in oral and written German, exercises in dictation, letter writing and composition. Special attention to modern German idiom. Use of audio-lingual laboratory.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 224 Intermediate German)

LA 226 Introduction to German Literature 3 Credits

Readings and lectures in German literature from the Old High German period to the 18th century. Lectures and reports. Use of audio-lingual laboratory to hear recordings of masterpieces.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 225 German Conversation and Composition)

LA 227 Introduction to German Literature 3 Credits

Further readings and lectures in German literature with emphasis on great masters from the 18th century to modern times.

3 Class Hours, 1 Laboratory Hour
(Prerequisite: LA 226 Introduction to German Literature)

LA 233 English Literature 3 Credits

The history and development of the English novel as a literary form. Reading and discussion of representative English novels from Fielding's *Joseph Andrews* to Conrad's *Lord Jim* with attention to both themes and structure.

3 Class Hours
(Prerequisite: LA 132 English Composition)

LA 234 English Literature 3 Credits

English dramatic literature from the Middle Ages to 1900. Emphasis on dramatic techniques and the historical, social and intellectual climate of the time.

3 Class Hours

LA 235 English Literature 3 Credits

English non-dramatic poetry from Chaucer to Eliot. Metrics and versification. Analysis of sounds, words, symbols, images, metaphors and tone in selected poems of various forms and types.

3 Class Hours

LA 236 Literature of the Western World: Classical and Christian Backgrounds 3 Credits

Greek, Roman and medieval Christian writing and its influence on Western culture.

3 Class Hours

LA 237 Literature of the Western World: Fiction and Poetry 3 Credits

Representative works from the Renaissance to the present.

3 Class Hours

LA 238 Literature of the Western World: Dramatic Literature 3 Credits

Representative selections dating from the Renaissance with an emphasis on the period from Realism to the Theatre of the Absurd.

3 Class Hours

LA 248 History of Latin America 3 Credits

Pre-Columbian Latin America, the Spanish and Portuguese conquests and the Colonial Period.

3 Class Hours

LA 249 History of Latin America 3 Credits

Latin America's wars of independence and the economic and cultural development of the nineteenth century.

3 Class Hours

LA 250 History of Latin America 3 Credits

The major Latin American nations in the twentieth century in terms of political, economic and social institutions and problems.

3 Class Hours

LA 280 Sociology 3 Credits

Sociological facts and principles dealing with the scientific study of human relationships. Emphasis on analysis and study of culture and human society, socialization, groups and group structures.

3 Class Hours

LA 281 Sociology 3 Credits

Stratification, collective behavior patterns and the various social institutions including associations, the family, and education. The application of sociological principles relating to the agents of social change.

3 Class Hours

(Prerequisite: LA 280 Sociology)

LA 282 Sociology 3 Credits

The structure of the aggregates of population, minority groupings, crime and delinquency, and major changes in technology, urbanism and political structures as they relate to man.

3 Class Hours
(Prerequisite: LA 281 Sociology or its equivalent)

LA 801 English 3 Credits

Introduction to the nature and history of language. Semantics. Levels of usage. The construction of effective sentences and paragraphs. Critical reading of related essays. (Formerly GE 101.)

3 Class Hours

LA 802 English 3 Credits

Instruction and practice in the different types of writing including informative, evaluative and persuasive. Style, tone and diction, and their relationship to the writer's purpose. Critical reading of related essays. (Formerly GE 102.)

3 Class Hours
(Prerequisite: LA 801 English)

LA 803 English 3 Credits

The reading of prose selections dealing philosophically with man and his views of the world. Development of analytical reading, critical thinking and effective communication. (Formerly GE 103.)

3 Class Hours
(Prerequisite: LA 802 English)

LA 804 Effective Speaking 3 Credits

Speech communication through voice, words and action. Voice production, diction, platform presence. Organization of ideas. Practice in presenting speeches of different types. (Formerly GE 104.)

3 Class Hours

LA 805 American Literature 3 Credits

Fiction by important American writers of the last one hundred years. Emphasis on the novel and short story as art forms presenting significant ideas about the individual and society. (Formerly GE 105.)

3 Class Hours

LA 810 Psychology 3 Credits

Principles of psychology as they relate to the problems of human behavior and adjustment. Emphasis on growth and development, motivation, emotions, learning, individual differences, behavior disorders, personality and mental hygiene. (Formerly GE 110.)

3 Class Hours

LA 820 Economics 3 Credits

Economic facts and principles and their application to the American society. Production, consumption, forms of business ownership, national income, money and credit, banking, taxation, social security. Labor-management relations, business cycles, international trade, comparison of capitalism with other economic systems. (Formerly GE 120.)

3 Class Hours

LA 830 Sociology 3 Credits

Human groups, their activities, interrelationships, forces influencing them, and the influence of groups upon individuals and society. Emphasis on the foundations of society, our cultural environment, the family, education, religion, the growth of the individual within the social framework, the aged in modern society, social progress. (Formerly GE 130.)

3 Class Hours

LA 840 Introduction to Philosophy 3 Credits

The basic problems of philosophy, such as the nature of truth, origin and development of life, idealism, naturalism, ethics, freedom, the natural and the supernatural. (Formerly GE 140.)

3 Class Hours

LA 850 Political Science 3 Credits

American government explored specifically through the Supreme Court, civil liberties, political parties, bureaucracy and generally through the development of the framing fathers' accomplishments. (Formerly GE 150.)

3 Class Hours

LA 860 The Language of Music 3 Credits

The essentials of musical knowledge needed to understand all forms of music through a study of rudiments, harmony, style, form and a survey of music literature. Emphasis upon developing good listening habits and an awareness of the art of music. (Formerly GE 160.)

3 Class Hours

LA 861 Music in the Baroque and Classic Era 3 Credits

Music and musical styles of the 17th and 18th centuries. Emphasis upon the composers and their styles and the relationship of music to the social, political and other cultural reforms of the period. (Formerly GE 161.)

3 Class Hours

(Prerequisite: LA 860 The Language of Music or consent of instructor)

LA 862 19th Century Romantic Music 3 Credits

Important musicians and musical styles of the Romantic Period. Emphasis upon the developments in piano literature, the symphony orchestra and opera. Listening to selected recordings and attendance at local concerts form an integral part of the discussions. (Formerly GE 162.)

3 Class Hours

(Prerequisite: LA 860 The Language of Music or consent of instructor)

LA 863 Introduction to Contemporary Music 3 Credits

Important musicians and musical styles in the 20th century. Emphasis upon the trends and development of music in America as well as a study of leading European composers. (Formerly GE 163.)

3 Class Hours

(Prerequisite: LA 860 The Language of Music or consent of instructor)

MATHEMATICS

MA 101 Mathematics 3 Credits

Logical structure of algebra. Fundamental operations with integers and with fractions. Includes the number system, linear equations and applied problems, exponents and radicals, functions and graphs, quadratic equations.

3 Class Hours

MA 102 Mathematics 3 Credits

A continuation of MA 101 Mathematics, including additional topics in trigonometry, together with the algebraic topics of inequalities, binomial theorem, probability. An introduction to the techniques of elementary statistics. Computation with slide rule, logarithms and scientific notation.

3 Class Hours
(Prerequisite: MA 101 Mathematics)

MA 104 Mathematics of Finance 3 Credits

An application of mathematics to the business world. Fundamental mathematical theory is applied to typical situations in accounting, marketing, business administration, investments and life insurance problems.

3 Class Hours
(Prerequisite: MA 111 College Algebra)

MA 105 Mathematics 3 Credits

Summarization of data, fundamentals of probability distributions, normal distribution, mean and standard deviation.

3 Class Hours
(Prerequisite: MA 101 Mathematics)

MA 110 College Algebra 3 Credits

Mathematical logic, the number system, polynomials and the binomial theorem, algebraic fractions, exponents and radicals, sets and equations.

3 Class Hours

MA 111 College Algebra 3 Credits

Simultaneous equations, determinants and matrices, inequalities and algebraic, exponential and logarithmic functions.

3 Class Hours
(Prerequisite: MA 110 College Algebra)

MA 112 College Algebra and Trigonometry 3 Credits

Trigonometric functions, solutions of triangles, identities, vectors, radian measure, graphs, plane analytic geometry including the straight line and the cone sections, polar coordinates, permutations, combinations and probability.

3 Class Hours
(Prerequisite: MA 111 College Algebra)

MA 130 Modern Algebra 3 Credits

Set theory, mappings, classification of the complex number system, integral domains, equivalence relations, equivalence classes, linear congruences and groups.

3 Class Hours

MA 131 Modern Algebra 3 Credits

Group theory, groupoids, quasi-groups, loops, semi-groups, cyclic groups, isomorphisms, cosets, invariant subgroups and quotient groups.

3 Class Hours
(Prerequisite: MA 130 Modern Algebra)

MA 132 Modern Algebra 3 Credits

Automorphisms, homomorphisms, field, rings, ideals, residue class rings, matrix theory, determinants and vector spaces.

3 Class Hours
(Prerequisite: MA 131 Modern Algebra)

MA 140 College Algebra and Trigonometry 4 Credits

Topics in algebra and trigonometry necessary in technical courses: solutions of algebraic and exponential equations, logarithms, determinants, quadratic equations, trigonometric functions, trigonometric equations, oblique triangles, complex numbers and inequalities.

4 Class Hours

MA 141 Analytic Geometry and Calculus 3 Credits

Rectangular coordinates in a plane, the straight line, slope and inclination, equations of curves, discussion of a curve, functions and limits, indeterminate forms, continuity, the derivative, differentiation of algebraic functions.

3 Class Hours

(Prerequisite: MA 140 College Algebra and Trigonometry)

MA 142 Analytic Geometry and Calculus 3 Credits

Applications of derivatives, maxima and minima, differentials, indefinite integral, definite integral, applications of definite integral. Area between curves, volumes by cylindrical washers and shells, length of plane curve, centroid and second moment of area, moment of inertia.

3 Class Hours

(Prerequisite: MA 141 Analytic Geometry and Calculus)

MA 160 Analytic Geometry and Calculus 4 Credits

Rectangular coordinates in a plane, equations and loci, the straight line, discussion of the equation of a locus, functions and limits, continuity, derivative of a function, differentiation of algebraic functions. Explicit and implicit differentiation, inverse functions, successive differentiation, tangents and normals to plane curves, acceleration, maxima and minima of functions of one variable, inflection points.

4 Class Hours

MA 161 Analytic Geometry and Calculus 4 Credits

Differentials, Rolle's theorem, mean value theorem, indefinite and definite integral, area under a curve, work done by a variable force. Fundamental theorem of integral calculus, mean-value theorem for integrals, plane areas, volume by cylindrical disks and cylindrical shells, lengths of curve, centroid of area, centroid of solid, moment of inertia. The conics, trigonometric functions, inverse trigonometric functions, exponential functions, logarithmic functions, hyperbolic functions.

4 Class Hours

(Prerequisite: MA 160 Analytic Geometry and Calculus)

MA 162 Analytic Geometry and Calculus 4 Credits

Polar coordinates, parametric equations, curvilinear motion, curvature of plane curves. Integration by standard forms, by parts and by trigonometric substitution. Partial fractions, reduction formulas, table of integrals, applications of definite integrals. Plane areas, volumes, length of curve, surface area, centroids, approximate integration, improper integrals, indeterminate forms.

4 Class Hours

(Prerequisite: MA 161 Analytic Geometry and Calculus)

MA 170 Analytic Geometry and Calculus 4 Credits

Fundamentals of plane analytic geometry, functions, derivative of a function, limits, continuity. Inverse of differentiation, area under a curve. Differentiation of algebraic functions, second derivative, implicit functions, the conics. Maxima and minima, trigonometric and inverse trigonometric functions, simple harmonic motion.

4 Class Hours

MA 171 Analytic Geometry and Calculus 4 Credits

Differentials and antiderivatives, the definite integral, volumes, work, energy moments of inertia. Logarithmic and exponential functions, hyperbolic functions.

4 Class Hours
(Prerequisite: MA 170 Analytic Geometry and Calculus)

MA 172 Analytic Geometry and Calculus 4 Credits

Techniques of integration, integration of standard forms, arc lengths, moments and centroids, force and fluid pressure, polar coordinates, motion in a curve, vector functions, further study of limits, L'Hospital's Rule.

4 Class Hours
(Prerequisite: MA 171 Analytic Geometry and Calculus)

MA 240 Analytic Geometry and Calculus 3 Credits

The conic sections, general and standard equations of conics, transformation of coordinates, differentiation of transcendental functions. Hyperbolic functions, polar coordinates, parametric equations, velocity and acceleration in curvilinear motion, curvature of plane curves.

3 Class Hours
(Prerequisites: MA 142 Analytic Geometry and Calculus and permission of student's department chairman)

MA 241 Analytic Geometry and Calculus 3 Credits

Integration by standard forms, integration by parts, trigonometric substitution, partial fractions, use of table of integrals, applications of definite integrals. Trapezoidal and parabolic approximation, improper integrals, indeterminate forms, infinite series, expansion of functions in series.

3 Class Hours
(Prerequisite: MA 240 Analytic Geometry and Calculus)

MA 260 Analytic Geometry and Calculus 3 Credits

Infinite series, Taylor's and MacLaurin's series, calculation of logarithms, solid analytic geometry, partial derivatives, multiple integrals.

3 Class Hours
(Prerequisite: MA 162 Analytic Geometry and Calculus)

MA 261 Differential Equations 3 Credits

Ordinary differential equations, existence theorems. Variables separable, homogeneous, exact differential, linear and Bernoulli equations. Geometric applications, heat flow, first and second order processes. Non-homogeneous equations, linear equations of higher order, methods of undetermined coefficients and variation of parameters, solutions and theorems by operators, dynamic applications.

3 Class Hours
(Prerequisite: MA 260 Analytic Geometry and Calculus)

MA 262 Differential Equations 3 Credits

Numerical methods of solution, Taylor's series, Runge-Kutta method, Adams' and Milne's methods. Special differential equations of the second order, first order differential equations of higher degree than the first, the Clairaut equation. Series solution, the method of Frobenius, Legendre and Bessel equations. Partial differential equations, method of Lagrange-Charpit, Cauchy's problem.

3 Class Hours
(Prerequisite: MA 261 Differential Equations)

MA 270 Analytic Geometry and Calculus 3 Credits

Infinite series, methods of approximation, determinants and linear systems, analytic geometry of three dimensions, partial differentiation, multiple integrals.

3 Class Hours

(Prerequisite: MA 172 Analytic Geometry and Calculus)

MA 271 Differential Equations 3 Credits

The differential equation, hyperbolic functions. Differential equations of the first order, separable equations, particular solutions, dynamics, chemical reactions. Integrable combinations, homogeneous equations, equivalence of solutions, linear equations, electric circuits, Bernoulli's equation, orthogonal trajectories. Linear equation with constant coefficients, rectilinear motion, deflection of beams, undetermined coefficients, variation of parameter, forced vibration and electric circuits. Applications on the analog and IBM 1620 computers. (Emphasis on engineering sciences.)

3 Class Hours

(Prerequisite: MA 270 Analytic Geometry and Calculus)

MA 272 Differential Equations 3 Credits

Special higher order equations: reducible to linear with constant coefficients, dependent or independent variable missing. Simultaneous equations, systems of linear equations, roots of unity, linear equation of second order. Exact, Riccati and adjoint equations. Series solutions: power series, Frobenius series. Partial differential equations, partial derivatives, separation of variables, vibrating string. Applications on the analog and the IBM 1620 digital computer. (Emphasis on engineering sciences.)

3 Class Hours

(Prerequisite: MA 271 Differential Equations)

MA 273 LaPlace Transforms 3 Credits

Application of LaPlace Transform methods to various engineering problems involving ordinary and linear partial differential equations.

3 Class Hours

(Prerequisite: MA 272 Differential Equations)

MECHANICAL TECHNOLOGY

MT 101 Engineering Drawing 1 Credit

A basic drafting course specifically designed for Business students.

3 Laboratory Hours

MT 102 Engineering Drawing 2 Credits

A basic drawing course intended for chemical students. Course includes sketching, lettering, the use of instruments, orthographic projection, auxiliary views, threaded fasteners, piping diagrams, flow charts and engineering graphs.

6 Laboratory Hours

MT 103 Engineering Drawing 2 Credits

Basic orientation in engineering drawing, emphasizing line and instrument exercises, lettering, orthographic projection, dimensioning and notes, auxiliary views, sections, threads and fasteners, assemblies and sketching.

6 Laboratory Hours

MT 110 Engineering Drawing 1 Credit

A basic orientation course in engineering drawing which includes lettering, line and instrument exercises, orthographic projection, dimensioning and notes, auxiliary views and sections.

3 Laboratory Hours

MT 111 Engineering Drawing and Descriptive Geometry 2 Credits

Basic rules and practice for drawing threads, fasteners, and assemblies including sketching techniques. A study of principles of descriptive geometry designed to determine true lengths, true size, and relationships between lines and surfaces. To find intersections, to ascertain clearances, and to decide relationships affecting the design of parts in a machine or structure.

1 Class Hour, 3 Laboratory Hours
(Prerequisite: MT 110 Engineering Drawing)

MT 112 Descriptive Geometry 2 Credits

Basic principles of descriptive geometry designed to determine true relationships between lines and surfaces, to find intersections, to locate elements or tangents, to ascertain clearances, or to decide relationships affecting the design of parts in a machine or structure.

1 Class Hour, 2 Laboratory Hours
(Prerequisite: MT 103 Engineering Drawing)

MT 129 Shop 2 Credits

Observation and discussion of the machines and materials used in industry to produce machines, appliances, containers. Practice in processing metals, leading to acquaintance with technical and shop terms and a knowledge of what is done in machine shops.

1 Class Hour, 3 Laboratory Hours

MT 130 Manufacturing Processes 3 Credits

Basic manufacturing materials and processes such as melting and casting metal, powder metallurgy, plastics, and elementary aspects of metal cutting machine tools. Practice and study of oxyacetylene, arc, and resistance welding.

2 Class Hours, 2 Laboratory Hours

MT 131 Manufacturing Processes 2 Credits

Elements of machine tool operation involving the use of the lathe, miller, shaper, drill press and fundamental bench operations. Study of cutting speeds, feeds, coolants, threads, tapers, and tool grinding.

1 Class Hour, 3 Laboratory Hours
(Prerequisites: MT 130 Manufacturing Processes, MA 140 College Algebra and Trigonometry and MT 110 Engineering Drawing)

MT 132 Manufacturing Processes 2 Credits

Continuation of MT 131 plus operations of the surface grinder and the cylindrical grinder, advanced lathe operations, jig boring, gear cutting, lapping, honing and scraping. Practice and study of turret lathe and automatic screw machine operations.

1 Class Hour, 3 Laboratory Hours
(Prerequisite: MT 131 Manufacturing Processes)

MT 135 Materials and Processes 4 Credits

Advanced study of the properties and applications of engineering materials and the processes involved in their utilization.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: MT 130 Manufacturing Processes, MT 165 Metallurgy and MT 257 Strength of Materials)

MT 151 Orientation 0 Credits

A definition of the engineering technician, his college, training, responsibilities and future. The use of the slide rule and study techniques.

1 Class Hour

MT 155 Applied Mechanics (Statics) 3 Credits

A study of the free body diagram, trusses, spatial force systems, friction, centroids, moments of inertia, shear and moment diagrams and hydrostatics.

3 Class Hours
(Prerequisites: MA 140 College Algebra and Trigonometry and PH 140 Physics)

MT 156 Applied Mechanics (Dynamics) 3 Credits

A study of forces and force systems as they influence the motion of solid and fluid bodies. Kinematics, kinematics of rigid bodies, kinetics, work and energy, impulse-momentum, and mechanical vibrations.

3 Class Hours
(Prerequisite: MT 155 Applied Mechanics)

MT 165 Metallurgy 4 Credits

Fundamentals of the physical metallurgy of ferrous and nonferrous alloys, investigation of the physical properties of metals, hardness tests, thermal analysis, and grain structure examination.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: PH 141 Physics and CH 104 Chemistry)

MT 220 Mechanical Design 3 Credits

Machine motion and basic mechanisms. Machine motion includes rectilinear and curvilinear displacement, velocity, and acceleration. Basic mechanisms include linkages, cams and gears.

2 Class Hours, 3 Laboratory Hours
(Prerequisites: MT 110 Engineering Drawing, MT 156 Applied Mechanics and MT 257 Strength of Materials)

MT 221 Mechanical Design 4 Credits

Principles of mechanical design covering the selection of materials, stress investigation, and the design of fundamental machine elements.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: MT 220 Mechanical Design and MT 132 Manufacturing Processes)

MT 240 Precision Measurement 2 Credits

The theory and practice of precision measurement of the dimensional character of manufactured parts. Also the measurement of physical quantities such as time, mass, temperature, flow, pressure and speed which are utilized in the control of physical systems.

1 Class Hour, 3 Laboratory Hours
(Prerequisites: MT 132 Manufacturing Processes, PH 141 Physics and PH 142 Physics)

MT 254 Strength of Materials 4 Credits

Relationship between stress and strain, the calculation of stresses in machine parts, beams and columns, the use of shear and moment diagrams, the determination of moments of inertia and centers of gravity, the analysis of the effect of loading on stress distribution. Tests on wood, concrete, plastics and metal on standard testing machines in accordance with ASTM testing procedures.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 192 Statics and MA 171 Analytic Geometry and Calculus)

MT 257 Strength of Materials 4 Credits

Stress and strain, elasticity, torsion, welded joints, riveted joints, beam stresses, centroids, moments of inertia, shear and moment diagrams. Laboratory work includes strain gauges, tests on wood, metals and plastics conducted in accordance with ASTM and AASHO standards.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: MT 155 Applied Mechanics and
MA 141 Analytic Geometry and Calculus)

MT 260 Thermodynamics I 4 Credits

Laws and methods, thermodynamic properties of gases, energy equations, equation of state for gases, process equations, gas cycles for power and refrigeration, analysis of processes in and performance of fluid flow and thermal equipment. Laboratory experiments on the application of theory to fluid flow and thermal processes and equipment.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: MT 261 Fluid Mechanics)

MT 261 Fluid Mechanics 3 Credits

Behavior of compressible and non-compressible fluids under static and dynamic conditions, including principles of hydrostatics, pressure measurements, flow, flow measurement, viscosity, hydrodynamic power and force.

3 Class Hours
(Prerequisites: PH 141 Physics, MA 142 Analytic Geometry and Calculus and
MT 156 Applied Mechanics)

MT 262 Thermodynamics II 4 Credits

Laws and methods, thermodynamic properties of vapors, energy equations, process equations, vapor cycles for power and refrigeration, analysis of processes in and performance of fluid flow and thermal equipment. Laboratory experiments on the application of theory to fluid flow and thermal processes and equipment.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: MT 260 Thermodynamics I)

MT 267 Statistical Quality Control 4 Credits

Probability and statistics as they relate to sampling theory and the control of quality in the manufactured product. Standard deviation, areas under the ordinates of the normal curve, the poisson, control charts. Single, double and sequential sampling plans, machine capability, product reliability, and statistical dimensioning.

3 Class Hours, 2 Laboratory Hours
(Prerequisites: MT 240 Precision Measurement, MA 142
Analytic Geometry and Calculus and GE 120 Economics)

MT 290 Organization and Management 3 Credits

Principles, functions and coordination of industrial organization. Topics covered include fundamentals, control and financing the organization, engineering the product and production, controlling production, materials, and quality.

3 Class Hours

MT 291 Organization and Management 3 Credits

Principles, functions, and coordination of industrial organization. Topics covered include industrial relations, sales and promotion, internal financing and budgetary control.

3 Class Hours
(Prerequisite: MT 290 Organization and Management)

MEDICAL OFFICE ASSISTANT

MO 101 Ethics and Orientation 1 Credit

History and scope of health specialties. Field trips. Professional ethics. Responsibility of health personnel to self, employer, physician and patient. Professional affiliation.

2 Laboratory Hours

MO 102 Terminology 3 Credits

Common medical terminology as correlated with anatomical systems. Suffixes, prefixes and use of medical dictionaries. Introduces standard nomenclature of diseases and operations and medical specialties.

3 Class Hours

MO 123 Medical Records Science 4 Credits

Continues standard nomenclature. Also history, use, value and legal aspects of medical records. Analysis, numbering, filing, indexing, and transcription.

3 Class Hours, 3 Laboratory Hours

MO 205 Medical Office Procedures 3 Credits

Medical assisting procedures used in the physician's office including office management, caring for medical and surgical instruments, first aid and aide-training for civil emergencies. Professional ethics, jurisprudence and nomenclature.

2 Class Hours, 3 Laboratory Hours

MO 206 Medical Office Procedures 3 Credits

Advanced technical procedures in medical assisting including such specialties as electrocardiography, basal metabolism, audiography, physical therapy. Includes field trips and practice experiences.

2 Class Hours, 3 Laboratory Hours

MO 224 Medical Records Science 3 Credits

Collection, correlation and quantitative analysis of statistical data by various methods. Responsibilities of the medical records technician to herself, attending physicians, administration, nursing staff and other personnel. Continues directed practice.

1 Class Hour, 6 Laboratory Hours

MO 225 Medical Records Science 4 Credits

Legal aspects of record keeping, departmental organization, layout and management. Inter- and intra-departmental relations and duties. The Medical Library: organization and classification system. Staff relations and duties. Continues directed practice.

2 Class Hours, 6 Laboratory Hours

MO 226 Medical Records Science 3 Credits

Directed practice experiences of advanced responsibility. Includes minor supervisory roles. Evaluation seminar.

1 Class Hour, 6 Laboratory Hours

PHYSICAL EDUCATION

PE 101 Physical Education for Modern Living 1 Credit

A course to familiarize students with the need for and benefits of physical activity in modern living. A self-evaluation of one's physical condition and potential. Guidance in the selection of physical activities for leisure time use. The development and maintenance of physical fitness.

2 Laboratory Hours

PE 102, 103 Physical Education 1 Credit
PE 204, 205, 206

Instruction in a variety of carry-over sports, such as archery, badminton, bowling, golf, horseshoes, tennis, weight training. Participation and rudimentary instruction in football, soccer, basketball, volleyball, softball, tumbling, free exercise, field hockey, wrestling, physical conditioning and first aid.

Note: Students enrolled in Physical Education must wear a regulation gym uniform, which can be purchased at the College Book Store.

2 Laboratory Hours

PE 109 Standard First Aid Course 1 Credit

Fundamentals of first aid as outlined by the standard Red Cross course. For Dental Hygiene students, additional specialized seminars may be conducted.

1 Class Hour

PHYSICS

PH 100 Physical Science 3 Credits

A survey of the basic principles and methodology of the physical sciences.

2 Class Hours, 2 Laboratory Hours
Prerequisite: MA 101 Mathematics

PH 101 Physical Science 3 Credits

An introduction to physics and chemistry for students with a more adequate preparation than required for PH 100 Physical Science. Students who have one unit of either high school physics or chemistry, and trigonometry or intermediate algebra or mathematics will be expected to enroll in this course.

Motion, force, gravitation, atomic theory, the periodic table, energy and momentum, kinetic theory, electricity and magnetism, the nature of light.

2 Class Hours, 2 Laboratory Hours

PH 102 Descriptive Astronomy 3 Credits

For students with a more adequate preparation than required for PH 100 Physical Science. Students who have one unit of either high school physics or chemistry, and either intermediate algebra or Math 11 will be expected to enroll in this course.

Historical aspects of astronomy. Basic tools and methods. The atom, planets, satellites, comets, the sun and solar system, stars and galaxies.

3 Class Hours
(Prerequisite: MA 101 Mathematics or the equivalent)

PH 106 Physics 3 Credits

Heat and Sound: Solids, liquids, gases, temperature, heat and energy, waves, sound.
Mechanics: The laws of motion, vectors, energy and momentum, rotational mechanics, elastic vibrations.

2 Class Hours, 2 Laboratory Hours

PH 107 Physics 3 Credits

Mechanics: Concurrent and non-concurrent forces, vectors, torque.
Electricity: Electrostatics, electric currents, magnetism, electronics.
Light: Reflection and refraction of light, wave nature of light.
Modern Physics: Energy quantum, Bohr atom, wave nature of particles, natural radioactivity, artificial nuclear transformations, nuclear reactions.

2 Class Hours, 2 Laboratory Hours
(Prerequisite: PH 106 Physics)

PH 110 Physics (Radiation) 3 Credits

Quantum effects, atomic structure, nuclear structure, theory and operation of radiation detecting instruments, radioactive decay, standardization and calibration techniques, activation analysis.

2 Class Hours, 2 Laboratory Hours
(Prerequisites: MA 101 Mathematics and PH 106 Physics and CH 102 Chemistry)

PH 113 Physical Science 4 Credits

The Solar System: The Ptolemaic System of the universe, basic astronomical observations, the Copernican System, the Solar System.
Force and Motion: Newton's Laws of Motion, gravitation, work and energy.
Molecules and Energy: Concepts of heat and temperature, gaseous state of matter.

3 Class Hours, 2 Laboratory Hours

PH 114 Physical Science 4 Credits

Molecules and Energy: Kinetic-molecular theory of gases, basic laws and theories in chemistry, atoms and molecules, the periodic table.
Electrical Nature of Matter: Electrostatics, current, electricity and magnetism.
Structure of Matter: Wave motion, theories of light, spectra, Faraday's laws, divisibility of the atom, Bohr theory, X-rays, atomic number, electronic configuration of the elements.

3 Class Hours, 2 Laboratory Hours

PH 115 Physical Science 4 Credits

Atomic Structure & Chemical Combination: Electronic theory of bonding, oxidation and reduction, solutions, ionic theory, acid-base reactions, chemical energy, carbon chemistry.

Matter and Energy in the Study of the Earth: Rocks and minerals, natural energy transformations, weathering and erosion.

Energy Within Atomic Nuclei: Natural radioactivity, nuclear energy, fission and fusion, the universe beyond the solar system.

3 Class Hours, 2 Laboratory Hours

PH 140 Physics (Mechanics) 4 Credits

Composition and resolution of vectors, equilibrium, moment of a force, rectilinear motion, gravitation, motion in a plane, work and energy, impulse and momentum, rotation, elasticity, harmonic motion, hydrostatics, Bernoulli's equation.

3 Class Hours, 2 Laboratory Hours

PH 141 Physics (Heat, Sound, Light) 4 Credits

Heat: Temperature, thermal expansion, kinetic theory, change of phase, transfer of heat, the law of thermodynamics.

Sound: Wave motion, sound sources, acoustical phenomena.

Light: Nature of light, reflection and refraction, mirrors and lenses, illumination, interference and diffraction, polarization.

3 Class Hours, 2 Laboratory Hours
(Prerequisite: PH 140 Physics)

PH 142 Physics (Electricity and Magnetism) 4 Credits

Coulomb's law, electric field and potential, capacitance and dielectrics, current and resistance, electric circuits, chemical and thermal emfs, magnetic fields of currents, magnetic properties of matter, induced emf, alternating currents, electrons and ions.

3 Class Hours, 2 Laboratory Hours
(Prerequisite: PH 141 Physics (Heat, Sound, Light))

PH 170 Physics (Mechanics) 4 Credits

Statics and dynamics: vectors, particle kinematics, motion in a plane, particle dynamics, Newton's Laws of Motion, friction, centripetal forces. Work energy, impulse and momentum, principles of conservation of energy and momentum, collision phenomena, rotational kinematics, torque, rotational dynamics of rigid body. **Concurrent enrollment in MA 170 Analytic Geometry and Calculus required.**

3 Class Hours, 3 Laboratory Hours

PH 171 Physics (Mechanics and Heat) 4 Credits

Oscillations, gravitation, fluid statics and dynamics, waves in elastic media. Temperature, calorimetry, heat transfer, fusion, vaporization, elementary thermodynamics and kinetic theory.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 170 Physics and MA 170 Analytic Geometry and Calculus)

PH 172 Physics (Electricity and Magnetism) 4 Credits

Fundamental laws of electric and magnetic fields with application to elementary circuit problems. Electrostatic fields, induced emfs, inductance, capacitance, dielectrics, steady currents, and simple transients. Laboratory work consists of electrostatic, electromagnetic and circuit measurements.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 171 Physics and MA 171 Analytic Geometry and Calculus)

PH 192 Statics 4 Credits

The concepts of forces, moments and couples in static force systems through a vector approach.

4 Class Hours
(Prerequisites: PH 171 Physics and MA 171 Analytic Geometry and Calculus)

PH 210 Electrical Circuits 4 Credits

Study of basic electrical technology and circuit components: Kirchhoff's Laws, capacitors, inductors, charge and current relationships. Theory of Resistive Networks: Arithmetic solutions, topological definitions, mesh currents and node voltages, theorems of duality, linearity, superposition and reciprocity, equivalent circuits. Theory of Simple Operational Circuits: Differentiation, integration, singularity functions. Time Response of Single Elements: Volt-ampere relationships, initial energy storage, response function.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 172 Physics and MA 270 Analytic Geometry and Calculus)

PH 211 Electrical Circuits 4 Credits

Response of R-L, R-C, R-L-C, L-C Circuits: Pertinent differential equations, study step and impulse responses. Sine Waves, Phasors and the Frequency Domain: Behavior of circuits with sinusoidal currents, phasor method of solution, driving point impedances, three phase circuits, transfer impedance, mutual inductance, transformers. Power and Energy: Basic relationships, time domain and frequency domain considerations. Signal Analysis in Frequency Domain and Transform Networks: Fourier theorem, Fourier integral, LaPlace transform, Network solution using the LaPlace transform.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 210 Electrical Circuits and MA 270
Analytic Geometry and Calculus)

PH 270 Physics (Light and Sound) 4 Credits

Wave motion, sound and acoustical phenomena. Geometrical optics, optical parts and instrumentation. Physical optics, nature of light, interferometry, polarization of light.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 172 Physics and MA 172 Analytic Geometry and Calculus)

PH 271 Physics (Atomic) 4 Credits

Special theory of relativity, quantum description of waves and particles, models of the atom, elementary quantum mechanics. The quantized atom, the Pauli exclusion principle, Zeeman effect, elementary molecular physics.

3 Class Hours, 3 Laboratory Hours
(Prerequisites: PH 172 Physics and MA 270 Analytic Geometry and Calculus)

PH 272 Physics (Nuclear) 4 Credits

Nucleons and nuclear force, binding energy and stability of nuclei, nuclear models, radioactive growth and decay laws, natural radioactivity, decay modes. Nuclear accelerators, low-energy nuclear reactions, fission and fusion, cosmic rays and elementary particles.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: PH 271 Physics or equivalent)

PH 280 Astronomy 4 Credits

Fundamentals of astronomy including the earth's motion, earth satellites, the planets and the solar system, stellar structure and the sidereal universe. The laboratory will stress some practical aspects of astronomy, the use of the telescope and observing techniques.

3 Class Hours, 3 Laboratory Hours
(Prerequisite: MA 142 Analytic Geometry and Calculus)

PH 290 Dynamics 4 Credits

The concepts and principles of kinetic particles and vector systems, and the general methods of analysis of such systems.

4 Class Hours
(Prerequisite: PH 192 Statics)

PRE-TECH

PT 101 Physical Science 0 Credits

Introductory course of a three-term sequence. The concepts of dynamics and statics. Motion, forces, impulse and momentum, work and energy.

6 Class Hours

PT 102 Physical Science 0 Credits

Heat and the extension of the principle of conservation of energy, covering approximately one-half term. Then the course is divided into a three-hour course on theories of fields in electricity and magnetism, and a three-hour course on the structure of matter and an introduction to chemistry.

6 Class Hours
(Prerequisite: PT 101 Physical Science)

PT 103 Physical Science 0 Credits

Further elaborations of fields and their applications, introductory quantum physics of light and matter, atomic structure and the nucleus.

3 Class Hours
(Prerequisite: PT 102 Physical Science)

PT 110, 111, 112 Elements of Technical Mathematics 0 Credits

A three-term sequence of integrated mathematics involving a mature treatment of the topics of algebra, trigonometry and some topics of analytic geometry. Special attention to technical computations using the slide rule, logarithms, science notation and dimensional analysis.

5, 5, 5 Class Hours

PT 120 Technical Calculations 0 Credits

Technical problem solving, applying principles and concepts of the student's concurrent courses in mathematics and PT 101 Physical Science.

4 Laboratory Hours

PT 121 Technical Calculations 0 Credits

Concurrent with PT 102 Physical Science. Problems involving heat and energy. At approximately mid-term the course is divided into two two-hour sessions emphasizing problems in chemistry and electricity, respectively.

4 Laboratory Hours
(Prerequisite: PT 120 Technical Calculations)

PT 122 Technical Calculations — 0 Credits

Concurrent with PT 103 Physical Science. Problems involving theories of fields, elementary quantum theory, theories of atomic structure and the nucleus.

2 Laboratory Hours
(Prerequisite: PT 121 Technical Calculations)

PT 130 Engineering Drawing — 1 Credit

Fundamentals of Engineering Drawing: simple multiview drawing and sketching, with stress on accuracy and neatness in lettering and linework.

3 Laboratory Hours

PT 131 Engineering Drawing — 1 Credit

Orthographic projection, auxiliary views, sectional views, pictorial drawing, free hand drafting with continued emphasis on accuracy and neatness.

3 Laboratory Hours
(Prerequisite: PT 130 Engineering Drawing)

PT 132 Engineering Drawing — 1 Credit

Developments and intersections, threads and fastenings, welding drawings, working drawings, exploded views. Continued emphasis on accuracy and neatness.

3 Laboratory Hours
(Prerequisite: PT 131 Engineering Drawing)

PT 140 Chemistry — 0 Credits

Rudiments of electrochemistry, thermochemistry, solutions, atomic structure and bonding, descriptive coverage of the more common elements and families.

3 Class Hours, 2 Laboratory Hours
(Prerequisite: PT 102 Physical Science)

PT 150, 151, 152 English — 0 Credits

A three-term sequence of courses designed to improve the student's mastery of language. Concentration on grammar, spelling, punctuation and the organization of ideas for effective expository writing. Development of reading skills: speed, comprehension, vocabulary building.

3 Class Hours

X-RAY TECHNOLOGY

XR 113 Physics (X-Ray Tube) — 1 Credit

Detailed lectures and laboratory exercises relating to X-ray tube physics. Preventive maintenance on component circuits and the accessories of an X-ray unit. Must be taken concurrently with PH 110 Physics.

1 Class Hour

XR 121 Radiography — 4 Credits

Basic principles of radiographic exposure. Roentgenographic positioning. Dark room chemistry. Must be taken concurrently with XR 141 Hospital Radiographic Technique and BI 130 Anatomy.

3 Class Hours, 4 Laboratory Hours

XR 122 Radiography 4 Credits

Continuation of roentgenographic positioning and principles of radiographic exposure. Contrast media. Must be taken concurrently with XR 142 Hospital Radiographic Technique and BI 132 Zoology.

3 Class Hours, 4 Laboratory Hours
(Prerequisite: XR 121 Radiography)

XR 123 Radiography 3 Credits

Continues Radiography XR 122 emphasizing roentgenographic positioning with and without contrast media.

2 Class Hours, 4 Laboratory Hours
(Prerequisites: XR 122 Radiography and XR 142 Hospital Radiographic Technique and BI 132 Zoology)

XR 124 Radiography 2 Credits

Advanced techniques in roentgenographic positioning. Must be taken concurrently with XR 144 Hospital Radiographic Technique.

2 Class Hours
(Prerequisites: XR 123 Radiography and XR 143 Hospital Radiographic Technique)

XR 131 Seminar 1 Credit

Orientation to the field of X-Ray Technology including personal, professional and legal responsibility of the technician, the history and nature of X-rays, the need for and means of protection and the interdepartmental organization.

2 Laboratory Hours

XR 132 Seminar 1 Credit

Patient care procedures used by the X-ray technician in various situations. An understanding of the physiology of diseased cells and tissues necessary for efficient X-ray examination. Must be taken concurrently with BI 132 Anatomy.

2 Laboratory Hours
(Prerequisite: XR 131 Seminar)

XR 133 Seminar 1 Credit

Biomedical aspects of the effects of radiation together with general and specialized techniques used for protection of patient and personnel. Must be taken concurrently with PH 110 Physics.

1 Class Hour
(Prerequisite: XR 132 Seminar)

Radiographic Technique

Experience in the Radiology Department of a cooperating hospital. Observation and practice in positioning the sick and injured patient, obtaining the exact radiograph requested by the physician and assisting in the treatment of disease. Film exposure time, film manipulation and the finished radiograph are critically studied. Throughout the two academic years and interim summer certain approved radiographs must be completed. These by location include radiographs of: extremities, gastrointestinal tract, urinary tract (intravenous and retrograde pyelograms, urethrograms), skull (sinuses, facial bones, mandible), spine, pelvis (hips, hip-nailing), shoulder, thoracic cage and cavity (lungs and heart, sternum).

XR 141, 142, 143 Radiographic Technique 4 Credits

Practice in positioning, radiographic exposure and film critique in the radiology department of a cooperating hospital. These three courses must be taken concurrently with XR 121, 122, 123 Radiography, respectively.

16 Laboratory Hours

XR 144 Radiographic Technique

Practice in radiographic technique and film critique at cooperating hospitals. Must be taken concurrently with XR 124 Radiography. Taken during summer between first and second year. A graduation requirement.

Minimum 1 Hour Film Critique and 36 Hours in Hospital X-ray Area
(Prerequisite: XR 143 Hospital Radiographic Technique)

XR 204 Anatomy (Topographic) 1 Credit

Radiological anatomy as depicted by a series of illustrated and applied lectures emphasizing surface landmarks and the relationship of organs to each other.

1 Class Hour
(Prerequisites: BI 132 Anatomy and XR 124 Radiography and XR 144 Hospital Radiographic Technique)

XR 224 Radiography 2 Credits

Problems and experiments related to manipulation of exposure factors. Advanced principles of radiographic exposure and construction of technique charts. Must be taken concurrently with XR 204 Anatomy.

1 Class Hour, 4 Laboratory Hours
(Prerequisites: XR 124 Radiography and XR 144 Hospital Radiographic Technique)

XR 225 Radiography 3 Credits

Specialized technical procedures in radiography including equipment, positioning and media.

2 Class Hours, 4 Laboratory Hours
(Prerequisite: XR 224 Radiography)

XR 234 Seminar 2 Credits

Problems seminar: general radiographic technique, film critique and pediatric radiography. The role of the technician in civilian emergencies.

2 Class Hours
(Prerequisites: XR 133 Seminar and XR 124 Radiography)

XR 235 Seminar 2 Credits

Preparation for office management including departmental organization, function, supervision, protection and finances. Continuation of training in office procedures, intra- and inter-departmental relationships, policies and attitudes.

2 Class Hours
(Prerequisite: XR 234 Seminar)

XR 236 Seminar 2 Credits

Advanced film critique. Pertinent current problems in radiography and special radiographic procedures including intra-oral radiography.

2 Class Hours
(Prerequisites: XR 235 Seminar and XR 225 Radiography)

XR 237 Seminar 2 Credits

Continuation of XR 236. Advanced film critique, current problems and special procedures.

2 Class Hours
(Prerequisite: XR 236 Seminar)

XR 244, 245, 246 Radiographic Technique 6 Credits

Advanced practice in radiographic technique and film critique.

24 Laboratory Hours
(Prerequisites: XR 144 Hospital Radiographic Technique and XR 124 Radiography)

XR 247 Radiographic Technique

Practice in advanced radiographic technique and film critique. Taken during summer between first and second year. A graduation requirement.

Minimum 1 Hour Film Critique and 36 Hours in Hospital X-ray Area
(Prerequisite: XR 246 Hospital Radiographic Technique)

XR 254 Radiotherapy 2 Credits

Effects of radiation on body tissue, protection practices and patient care.

2 Class Hours
(Prerequisites: XR 204 Anatomy and XR 133 Seminar and PH 110 Physics)

CO-CURRICULAR ACTIVITIES

The College recognizes the fact that student experiences outside the classroom are important in one's over-all development. For this reason the College supports an active co-curricular program as a complement to the academic program. The variety of activities on the campus reflects the diversification of student interests and provides the opportunity for students to develop talents, leadership ability and a sense of social responsibility.

Co-curricular activities are guided by two faculty-student committees—the Student Activity Committee for non-athletic activities and the Athletic Board of Control for sports.

The Student Activity Committee consists of four faculty members and the president of the Student Council. It approves, recommends and supervises the policy of all student activities, except athletics.

The Athletic Board of Control is composed of three faculty members, the director of athletics and one student. It develops and recommends policy for intercollegiate and intramural athletic programs.

Student Council

The Student Council, the governing body in student affairs, is the heart of the co-curricular activity program. The officers, elected from the student body, and the representatives from the various curriculums promote and coordinate the student activities. The Social Committee is one of the most important Student Council committees, as it is responsible for the extensive social program of the Council.

Music

The Student Council sponsors four performing vocal groups—the College Choir and the Madrigal Singers, which are open to both men and women students, the Tech Tone Masters which is a male glee club, and a women's glee club.

The College musical organizations also have in the past sung at the New York World's Fair, and joined with the Civic Theater of Binghamton for the cooperative production of Broadway musicals. In addition, an oratorio chorus of faculty, students and members of the community has performed the Handel oratorio, "The Messiah."

Honor Societies

PHI THETA KAPPA

In 1962 the Mu Eta chapter of Phi Theta Kappa was established at the College. Phi Theta Kappa is a national honor society at junior colleges, similar in purpose to Phi Beta Kappa at the four-year colleges and universities. Mu Eta chapter is open to freshmen and seniors who have achieved outstanding academic grades, been especially active in co-curriculur participation, demonstrated outstanding qualities of leadership and responsibility, and made noteworthy contributions to the College.

SIGMA PHI ALPHA

The national Dental Hygiene honor society, Sigma Phi Alpha, has a chapter at Broome Tech, the Upsilon chapter. Those senior dental hygiene students who rank highest in scholarship and character and who exhibit potential qualities for future growth and attainment are selected for membership.

Publications

Tech Talk is the campus newspaper and the *Citadel* is the College yearbook. *Tech Talk* is published semi-monthly and the *Citadel* is, of course, published just once a year. Positions on both publications are open to all students.

Tech Talk's purpose is to report news of the campus, student body and faculty. It also provides a place for students to express their ideas about campus activities and about events related to college life.

The *Citadel* provides a record, mostly pictorial, of the school year, and as such the objectives of its staff are to be historical as well as interesting.

Professional Society Affiliates

Since exposure to organizations in their fields of study is considered of benefit to students, many curriculums have their own affiliates of national professional societies. Among these are:

ASTME, the American Society of Tool and Manufacturing Engineers, for Mechanical Technology students.

A collegiate chapter of the Administrative Management Society, mainly for Business students although all students are welcome.

Dental Hygiene Association, an affiliate of the American Dental Hygiene Association.

Broome Tech Chapter Future Secretaries Association, affiliated with the National Secretaries Association (International) Binghamton Chapter.

IEEE, the Institute of Electrical and Electronics Engineers, for Electrical Technology students.

In addition, some meetings of local professional societies are attended by students, as the American Chemical Society invites Chemical Technology students to its meetings. Some professional societies hold meetings on campus, too, and students are always welcome to attend. Thus students have the opportunity to become acquainted with professional people in their fields of study and to attend lectures, and see films and demonstrations of new developments.

Other Clubs

In addition to the co-curricular activities already listed, other organizations are active on campus, such as the Camera Club, Circle K, Newman Club, Drama Club, Political Discussion Group, Liberal Arts Club, Civil Technology Association. All are open to all students in good standing. Details on the purposes and requirements for membership in all clubs are available in the Student Handbook.

ATHLETICS

Varsity Sports

Broome Tech fields varsity teams in seven sports—basketball, soccer, baseball, cross-country, golf, tennis and wrestling—and has acquired an excellent reputation for team play and sportsmanship.

The basketball team has captured the regional junior college championship six of the last nine years and has won 398 games and lost 118. The baseball team has won two regional tournaments in the last five years, and the cross-country, golf and soccer squads have also been regional powers in the past.

Intramural Sports

All students may participate in intramural sports. Men's teams representing the various curriculums compete for the coveted President's Trophy, awarded annually to the one acquiring the most points in a variety of activities. League competition is conducted in flag football, basketball, volleyball, soccer and softball, while students also compete in individual sports such as golf, badminton, archery, tennis, cross-country and bowling.

Archery, skiing and co-educational bowling clubs offer additional opportunity for participation in recreational activities, although they do not count in President's Trophy competition.

Women's Sports

The College also has a varied sports program for women students. In addition to the Physical Education classes, there are intramural competition and All-Sports Days.

Intramurals are contested in volleyball, badminton, tennis, archery, basketball, softball, bowling and Hurricane 9 (a modified form of touch football for girls). A Dean's Trophy is awarded to the winning team, similar to the President's Trophy for the men's intramurals champion.

The All-Sports Days consist of competition in varied sports against women's teams from other colleges, both at home and away.

Cheerleaders

A squad of cheerleaders performs at home basketball and soccer games. Positions are open to both men and women students whether they are freshmen or seniors, and tryouts will be held shortly after the start of the school year in September.

In addition, the College has a Hornet mascot costume, which will be worn by a student during games.

HONOR AWARDS

American Chemical Society (Binghamton Section) Award of $50 to the outstanding senior in chemistry.

American Material Handling Society (Southern Tier Chapter) Award of $75 to a Mechanical Technology senior who has demonstrated an interest in material handling, mechanical engineering or industrial engineering and who plans to make a career of one of these fields.

American Society for Testing and Materials (Binghamton Chapter) Award of a one-year membership in the society to a Mechanical or Civil Technology senior who has shown superior scholastic ability and an interest in testing or in materials.

American Society of Tool and Manufacturing Engineers (ASTME) Award of the Tool Engineers Handbook to a senior in the student ASTME Chapter who has contributed outstanding service.

Broome County Chamber of Commerce Award of an engraved certificate to two seniors (a man and a woman) for leadership in co-curricular activities and for satisfactory academic achievement.

Broome County Medical Assistants' Association Award of a Dorland Illustrated Medical Dictionary to a senior Medical Office Assistant who through scholarship and aptitude has shown proficiency in those subjects related to the management of a physician's office.

Broome County Medical Society Award of a $200 scholarship to a freshman student in the Medical Office Assistant program selected by the faculty for aptitude, initiative and scholarship.

Broome Tech Administrative Management Society Chapter Award of five inscribed pewter bowls to the outstanding student, academically, in each of the five options of the Business Department—accounting, marketing, business administration, engineering secretarial and executive secretarial.

Colonial TV Award of a $25 gift certificate to an Electrical Technology senior who has shown outstanding ability in laboratory work.

U. S. Greene Mathematics Award of $50 to a senior for showing a high degree of ability and progress in mathematics.

Institute of Electrical and Electronics Engineers (IEEE) Awards:

1—An IEEE certificate from the national IEEE office to an Electrical Technology senior who has contributed most to the student IEEE chapter.

2—$50 from the Binghamton Section of IEEE to the Electrical Technology senior who has shown leadership and outstanding ability in the IEEE organization. The student must be in the top quarter of his graduating class.

Ladies Auxiliary of the Broome County Area Chapter of the New York State Society of Professional Engineers Award of a $100 scholarship to an Engineering Science senior who has shown a high degree of engineering ability. Financial need is a factor in selecting this recipient.

Sales and Marketing Executive Club of the Southern Tier Award of a $200 scholarship for one person or $100 each to two freshman students in the marketing program on the basis of need and academic performance.

Stevenson Medal, given by the New York State Dental Society, to the Dental Hygiene student who possesses in the highest degree the qualities considered necessary for success in this work. Theory, technique and personality are the three principal considerations.

Upsilon Chapter of Sigma Phi Alpha (National Dental Hygiene Honor Society) Award of membership in the chapter. Limited to the top 10 percent of the Dental Hygiene graduates who rank highest in scholarship and character and who exhibit potential qualities for future growth and attainment.

THE LIBRARY

Because of the College's recent growth in student enrollment and in curriculum offerings, a new library building is under construction. It is hoped to have it ready for the fall of 1967. The recent addition of university-parallel programs to the original career-oriented courses has made it necessary to add many books and materials in many new areas.

Since 1947 the library has developed the most complete collection of technical works in the Southern Tier. More than half of its 20,000 books, pamphlets and government documents are in the scientific and engineering fields, covering both basic and advanced phases.

In addition, the library receives more than 350 periodicals, most of which are available in permanent form. It also combines facilities for research and leisure reading for both students and faculty.

Part of the library's purpose is to stimulate intellectual curiosity and to provide the means for independent research.

Located in the southwest wing of the Administration Building, the current library and its facilities are available to the public and to evening division students, too. The hours during the school year are:

Monday through Thursday—8 a.m. to 9 p.m.
Friday—8 a.m. to 4:30 p.m.
Summer hours are from 8 a.m. to 4 p.m., Monday through Friday.

NUCLEAR PHYSICS LABORATORY

One of the most modern facilities at Broome Tech is the Nuclear Physics Laboratory, which is an example of the College's constant effort to provide the most up to date education available. The laboratory is used to introduce seniors in the Engineering Science curriculum to the nuclear physics field, and Chemical Technology seniors use it in their Advanced Quantitative Analysis course. They learn the most modern methods being employed in industry and science, as there are now many industrial uses for radioactive materials.

A $12,000 grant from the Atomic Energy Commision in 1963 provided the funds to equip the laboratory.

STUDENT CENTER

The busiest and most versatile building on the Broome Tech campus is the Student Center. It houses the gymnasium, the College Cafeteria, Bookstore, Student Lounge, Faculty Dining Room, the Little Theater and the College nurse's office. This building is used by day and evening students of all curriculums.

AUDIO-VISUAL AIDS

Students and faculty have many audio, visual and audio-visual aids at their disposal through the Audio-Visual Department. These can be used for classroom or co-curricular purposes, and they include films and film strips, a preview room, an art workshop, tape recorders, transparent and opaque overhead projectors, as well as slide projectors.

The department makes signs and posters, handles the ordering, distributing and locating of films for faculty members, and provides the materials and assistance in the art workshop.

The College's photo department and duplicating center are also part of the Audio-Visual Department.

BROOME TECHNICAL COMMUNITY COLLEGE

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Broome Technical Community College is one of the 58 campuses that comprise the State University of New York (SUNY), which was established by the State Legislature in 1948. Its 58 units include 28 locally-sponsored two-year community colleges like Broome Tech.

In addition, there are four university centers, two medical centers, 10 colleges of arts and science, eight specialized colleges, and six two-year agricultural and technical colleges.

The establishment of three more colleges has been approved. University officials hope to have classes begin in 1970 at colleges of arts and sciences in Westchester and Nassau Counties, and the 29th community college has been approved for Herkimer County.

Graduate programs are offered in 24 of the four-year colleges, with 13 of them having advanced graduate study leading to the doctoral degree.

Although the campuses of the State University are separated geographically, all are united in their purpose—to improve and extend opportunities for youth to continue their education after high school. The geographic separation, moreover, enables students to enjoy the advantages of attending relatively small colleges, even though State University is one of the largest state universities in the country.

State University is guided by its motto: "Let Each Become All He Is Capable of Being."

State University is governed by a Board of Trustees, which is appointed by the Governor. Its function is to plan the total development of State-supported higher education. But each of its colleges is locally administered. Students, therefore, should write directly to the college in which they are interested for admission forms and information.

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- Dutchess Community College at Poughkeepsie
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- Jamestown Community College at Jamestown
- Jefferson Community College at Watertown
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MAP OF THE CAMPUS

1. **TITCHENER HALL**
    - Engineering Science
    - Liberal Arts
    - Audio-Visual Center
    - Nuclear Physics Laboratory
2. **ADMINISTRATION BUILDING**
    - Administrative Offices
    - Library
    - Computer Center
    - Business Department
3. **SCIENCE BUILDING**
    - Chemical Technology
    - Dental Hygiene
    - Medical Laboratory Technology
    - Medical Office Assistant
    - X-Ray Technology
4. **ELECTRICAL BUILDING**
    - Electrical Technology
5. **STUDENT CENTER**
    - Bookstore
    - Cafeteria
    - Gymnasium
    - Little Theater
    - Student Lounge
6. **MAINTENANCE BUILDING**
7. **TEMPORARY BUILDING**
    - Classrooms
    - Student Lounge Area
8. **MECHANICAL BUILDING**
    - Civil Technology
    - Mechanical Technology
9. **NEW LIBRARY**
    - Under Construction